

RESULT 11

Q9DFY7 PRELIMINARY; PRT; 128 AA.
 AC Q9DFY7
 DT 01-MAR-2001 (TrEMBLrel. 16, Created)
 DT 01-OCT-2001 (TrEMBLrel. 18, Last sequence update)
 DT 01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
 DE RC-RNase6 ribonuclease precursor.
 OS Rana catesbeiana (bull frog).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Amphibia; Batrachia; Anura; Neobatrachia; Ranioidea; Ranidae; Rana.
 OX NCBI_TaxID=8400;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC TISSUE=Liver;
 RX MEDLINE=20512555; PubMed=11058105;
 RA Liao Y.-D., Huang H.-C., Leu Y.-J., Wei C.-W., Tang P.-C., Wang S.-C.;
 RT "Purification and cloning of cytotoxic ribonucleases from Rana
 catesbeiana (bullfrog).";
 RL Nucleic Acids Res. 28:4097-4104 (2000).
 DR EMBL; AF242554; AAG31440.2; -.
 DR HSSP; P22069; 10NC.
 DR GO; GO:0003676; F:nucleic acid binding; IEA.
 DR InterPro; IPR001427; RNaseA.
 DR Pfam; PF00074; rnasea; 1.
 DR ProDom; PD000535; RNaseA; 1.
 DR PROSITE; PS00127; RNASE_PANCREATIC; 1.
 KW SIGNAL.
 FT CHAIN 1 23 POTENTIAL.
 FT CHAIN 24 128 RC-RNase3 RIBONUCLEASE.
 SQ SEQUENCE 128 AA; 14517 MW; 2B14986082E0587D CRC64;

Query Match 37.2%; Score 223.5; DB 13; Length 128;
 Best Local Similarity 40.2%; Pred. No. 7e-18;
 Matches 45; Conservative 19; Mismatches 39; Indels 9; Gaps 4;

QY 1 QNWATFOQKHINT-PIICNTLDNNIYVGQCKRVNTFISSATTVAICTGV-INLN 58
 DB 24 QDWTFQKKHLTDTRKKVCDVEMKALF----DCKKNTFIYALPGRVKALCKNIRDNTD 79
 QY 59 VLSSTRFQNLCTRTSITPRCPYSSRTETNYICVKCENQYVHFAGIGRCP 110
 DB 80 VLSRDAFLPQCDRIKL----PHYLLSSSTNTICITCVNQLPIHFAGVGSCTP 128

RESULT 12

Q9DFY5 PRELIMINARY; PRT; 128 AA.
 AC Q9DFY5
 DT 01-MAR-2001 (TrEMBLrel. 16, Created)
 DT 01-OCT-2001 (TrEMBLrel. 18, Last sequence update)
 DT 01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
 DE RC-RNase6 ribonuclease precursor.
 OS Rana catesbeiana (bull frog).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Amphibia; Batrachia; Anura; Neobatrachia; Ranioidea; Ranidae; Rana.
 OX NCBI_TaxID=8400;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC TISSUE=Liver;
 RX MEDLINE=20512555; PubMed=11058105;
 RA Liao Y.-D., Huang H.-C., Leu Y.-J., Wei C.-W., Tang P.-C., Wang S.-C.;
 RT "Purification and cloning of cytotoxic ribonucleases from Rana
 catesbeiana (bullfrog).";
 RL Nucleic Acids Res. 28:4097-4104 (2000).
 DR EMBL; AF242556; AAG31442.2; -.
 DR HSSP; P22069; 10NC.

Query Match 37.2%; Score 223.5; DB 13; Length 128;
 Best Local Similarity 40.2%; Pred. No. 7e-18;
 Matches 45; Conservative 19; Mismatches 39; Indels 9; Gaps 4;

DR GO; GO:0003676; F:nucleic acid binding; IEA.
 DR GO; GO:0004522; F:pancreatic ribonuclease activity; IEA.
 DR InterPro; IPR001427; RNaseA.
 DR Pfam; PF00074; rnasea; 1.
 DR ProDom; PD000535; RNaseA; 1.
 DR PROSITE; PS00127; RNASE_PANCREATIC; 1.
 KW SIGNAL.
 FT CHAIN 1 23 POTENTIAL.
 FT CHAIN 24 128 RC-RNase6 RIBONUCLEASE.
 SQ SEQUENCE 128 AA; 14804 MW; AFEBFD67D266C7C2 CRC64;

Query Match 35.8%; Score 214.5; DB 13; Length 128;
 Best Local Similarity 38.4%; Pred. No. 7.7e-17;
 Matches 43; Conservative 20; Mismatches 40; Indels 9; Gaps 4;

QY 1 QNWATFOQKHINT-PIICNTLDNNIYVGQCKRVNTFISSATTVAICTGV-INLN 58
 DB 24 QDWTFQKKHLTDTRKKVCDVEMKALF----DCKKNTFIYALPGRVKALCKNIRDNTN 79
 QY 59 VLSSTRFQNLCTRTSITPRCPYSSRTETNYICVKCENQYVHFAGIGRCP 110
 DB 80 VLSRDVFIYLPQCNRKLL----PHYRLDGSNTICITCMKELPIHFAGVGKCP 128

RESULT 13

Q9W738 PRELIMINARY; PRT; 169 AA.
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 DT 01-NOV-1999 (TrEMBLrel. 12, Created)
 DT 01-NOV-1999 (TrEMBLrel. 12, Last sequence update)
 DT 01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
 DE FRL2 protein.
 GN FRL2.
 OS Xenopus laevis (African clawed frog).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Amphibia; Batrachia; Anura; Mesobatrachia; Pipioidea; Pipidae;
 OC Xenopodinae; Xenopus.
 OX NCBI_TaxID=8355;
 RN [1]
 RP SEQUENCE FROM N.A.
 RX MEDLINE=96069863; PubMed=7585965;
 RA Kinoshita N., Minshull J., Kirschner M.W.;
 RT "The identification of two novel ligands of the FGF receptor by a
 yeast screening method and their activity in Xenopus development.";
 RL Cell 83:621-630 (1995).
 RN [2]
 RP SEQUENCE FROM N.A.
 RA Kinoshita N., Kirschner M.W.;
 RL Submitted (JUN-1999) to the EMBL/GenBank/DBJ databases.
 DR EMBL; AF159166; AAD41901.1; -.
 DR HSSP; P06656; 1LSQ.
 DR GO; GO:0003676; F:nucleic acid binding; IEA.
 DR GO; GO:0004522; F:pancreatic ribonuclease activity; IEA.
 DR InterPro; IPR001427; RNaseA.
 DR Pfam; PF00074; rnasea; 1.
 DR ProDom; PD000535; RNaseA; 1.
 DR PROSITE; PS00127; RNASE_PANCREATIC; 1.
 SQ SEQUENCE 169 AA; 18831 MW; D969F3E43B3CE1B8 CRC64;

Query Match 26.8%; Score 161; DB 13; Length 169;
 Best Local Similarity 39.3%; Pred. No. 1.5e-10;
 Matches 44; Conservative 10; Mismatches 50; Indels 8; Gaps 6;

QY 1 QNWATFOQKHII--NTPLICN-TILDNNIYVGQCKRVNTFI-SSATTVAICTGVIN 56
 DB 28 QINAFMEKHIVKEGATNCNQTIDKRNIRF-KNCKFRNTFIHDTNGKKVKEMCAGIVK 86
 QY 57 LN-VLSSTRFQNLCTRTSITPRP--CPYSSRTETNYICVKCENQYVHFAG 105
 DB 87 STFWISKELLPLTDCLLMGRTARPNCAYNQRTTGTGVTNITCENNYPVHFAG 138

RESULT 14

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Q9BEC1
ID Q9BEC1 PRELIMINARY; PRT; 170 AA.
AC Q9BEC1;
DT 01-JUN-2001 (TrEMBLrel. 17, Created)
DT 01-JUN-2001 (TrEMBLrel. 17, Last sequence update)
DT 01-JUN-2003 (TrEMBLrel. 24, Last annotation update)
DE Brain-type ribonuclease ribonuclease precursor (Fragment).
GN RNASE B.
OS Tragus javanicus (Lesser Malay chevrotain).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Tragulina;
OC Tragulidae; Tragulus.
OC NCBI_TaxID=9849;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=21347458; PubMed=11453981;
RA Breukelman H.J., Jekel P.A., Dubois J.Y., Mulder P.P.M.F.A.,
RA Warmels H.W., Beintema J.J.;
RT "Secretory ribonucleases in the primitive ruminant chevrotain
(RTragus javanicus)";
RL Eur. J. Biochem. 268:3890-3897(2001).
CC -!- SIMILARITY: BELONGS TO THE PANCREATIC RIBONUCLEASE FAMILY.
DR EMBL; AJ271299; CAC24723.1; -.
DR HSSP; P00656; 1LSQ.
DR GO; GO:0004519; F:endonuclease activity; IEA.
DR GO; GO:0016787; F:hydrolase activity; IEA.
DR GO; GO:0004522; F:pancreatic ribonuclease activity; IEA.
DR InterPro; IPR001427; RNaseA.
DR Pfam; PF00074; RNaseA; 1.
DR PRINTS; PR00794; RIBONUCLEASE.
DR ProDom; PD000535; RNaseA; 1.
DR SMART; SM00092; RNase_Pc; 1.
DR PROSITE; PS00127; RNASE_PANCREATIC; 1.
KW Endonuclease; Hydrolase; Nuclease; Signal.
FT NON_TER 1
FT SIGNAL <1 19
FT CHAIN 20 170
FT SEQUENCE 170 AA; 18832 MW; AB6CE7E1E5549AA0 CRC64;

Query Match 21.3%; Score 128; DB 6; Length 170;
Best Local Similarity 32.3%; Pred. No. 9.5e-07;
Matches 40; Conservative 18; Mismatches 46; Indels 20; Gaps 7;

QY 4 ATFOQKH-----INPILICNTLDNNIVIGGCKRVNTEFISSATTVKAICT----- 52
Db 25 AKFRQELDAGNSINSN-YCNLMKRR-KWTHGRCKPNTFTHESLEDVKAICSEKNIT 82

QY 53 ---GVINLVNLTFRQLNCTRTSITPRP-CPYSKRTETNYICVKCN--QYVHPAGI 106
Db 83 CKNGQFNCHQSNGT-MNITDCROTGGSKYENCAYKTSQKQYIIVACEGTPSPVHPDGS 141

QY 107 GRCP 110
Db 142 AVLPL 145

RESULT 15
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AC Q80Z85;
DT 01-JUN-2003 (TrEMBLrel. 24, Created)
DT 01-JUN-2003 (TrEMBLrel. 24, Last sequence update)
DT 01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
DE Angiogenin-4.
GN ANG4.
OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OC NCBI_TaxID=10090;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=NMRI;
RX MEDLINE=22493143; PubMed=12548285;

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RA Hooper L.V., Stappenbeck T.S., Hong C.V., Gordon J.I.;
RT "Angiogenins: a new class of microbicidal proteins involved in innate
immunity.";
RL Nat. Immunol. 4:269-273(2003).
DR EMBL; AY219870; AAO62354.1; -.
DR GO; GO:0003676; F:nucleic acid binding; IEA.
DR GO; GO:0004522; F:pancreatic ribonuclease activity; IEA.
DR InterPro; IPR001427; RNaseA.
DR Pfam; PF00074; RNaseA; 1.
DR PRINTS; PR00794; RIBONUCLEASE.
DR ProDom; PD000535; RNaseA; 1.
DR SMART; SM00092; RNase_Pc; 1.
DR PROSITE; PS00127; RNASE_PANCREATIC; 1.
SQ SEQUENCE 144 AA; 16554 MW; 09808807C00224C1 CRC64;

Query Match 21.2%; Score 127.5; DB 11; Length 144;
Best Local Similarity 38.2%; Pred. No. 9e-07;
Matches 29; Conservative 13; Mismatches 29; Indels 5; Gaps 3;

QY 33 CKRVNTEFISSATTVKAIC---TGVINLVNLTFRQLNCTRTSITP-RPCPYSSRTE 87
Db 62 CKDVNTEFIHGTKNIRALCKKSPYGENFRISNPFQITTCHSRGSPWPCGYAFKD 121

QY 88 TNYICVKCNQYVHPF 103
Db 122 FRVIVACEDGMPVHPF 137

Search completed: May 7, 2004, 21:46:04
Job time : 31.2816 secs

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GenCore version 5.1.6
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OM protein - protein search, using sw model

Run on: May 7, 2004, 21:29:40 ; Search time 33.3695 Seconds
(without alignments)
865.070 Million cell updates/sec

Title: US-09-961-400-2

Perfect score: 578

Sequence: 1 QDWLTFQKKHLNTRDVCN.....TFVCVTCENQAPVHFVGVGHC 104

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 1140673 seqs, 277566755 residues

Total number of hits satisfying chosen parameters: 1140673

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database : Published Applications AA.*

- 1: /cgn2_6/ptodata/2/pubpaa/US07_PUBCOMB.pep.*
- 2: /cgn2_6/ptodata/2/pubpaa/PCT_NEW_PUB.pep.*
- 3: /cgn2_6/ptodata/2/pubpaa/US06_NEW_PUB.pep.*
- 4: /cgn2_6/ptodata/2/pubpaa/US06_PUBCOMB.pep.*
- 5: /cgn2_6/ptodata/2/pubpaa/US07_NEW_PUB.pep.*
- 6: /cgn2_6/ptodata/2/pubpaa/PCTUS_PUBCOMB.pep.*
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- 8: /cgn2_6/ptodata/2/pubpaa/US08_PUBCOMB.pep.*
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- 13: /cgn2_6/ptodata/2/pubpaa/US10A_PUBCOMB.pep.*
- 14: /cgn2_6/ptodata/2/pubpaa/US10B_PUBCOMB.pep.*
- 15: /cgn2_6/ptodata/2/pubpaa/US10C_PUBCOMB.pep.*
- 16: /cgn2_6/ptodata/2/pubpaa/US10_NEW_PUB.pep.*
- 17: /cgn2_6/ptodata/2/pubpaa/US60_NEW_PUB.pep.*
- 18: /cgn2_6/ptodata/2/pubpaa/US60_PUBCOMB.pep.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	578	100.0	104	10	US-09-961-400-2
2	578	100.0	105	10	US-09-948-391A-9
3	578	100.0	105	10	US-09-961-400-6
4	578	100.0	127	10	US-09-948-391A-28
5	578	100.0	127	10	US-09-961-400-28
6	575	99.5	111	10	US-09-961-400-9
7	573	99.1	104	10	US-09-948-391A-11
8	573	99.1	104	10	US-09-961-400-11
9	573	99.1	105	10	US-09-948-391A-13
10	573	99.1	105	10	US-09-961-400-13
11	569	98.4	104	10	US-09-948-391A-2
12	569	98.4	104	10	US-09-948-391A-4
13	569	98.4	104	10	US-09-961-400-4
14	565	97.8	105	10	US-09-961-400-8
15	560	96.9	105	10	US-09-948-391A-8

16	560	96.9	111	10	US-09-948-391A-9	Sequence 9, Appli
17	556	96.2	105	14	US-10-153-882-2	Sequence 2, Appli
18	551	95.3	104	9	US-09-986-119-1	Sequence 1, Appli
19	551	95.3	104	10	US-09-918-887-1	Sequence 1, Appli
20	548	94.8	104	12	US-10-461-713-53	Sequence 53, Appli
21	445	77.0	83	9	US-09-986-119-3	Sequence 3, Appli
22	445	77.0	83	10	US-09-918-887-3	Sequence 3, Appli
23	281.5	48.7	110	10	US-09-948-391A-15	Sequence 15, Appli
24	281.5	48.7	110	10	US-09-961-400-15	Sequence 15, Appli
25	281.5	48.7	111	10	US-09-961-400-17	Sequence 17, Appli
26	277.5	48.0	110	10	US-09-961-400-19	Sequence 19, Appli
27	277.5	48.0	111	10	US-09-948-391A-21	Sequence 21, Appli
28	277.5	48.0	111	10	US-09-961-400-21	Sequence 21, Appli
29	277.5	48.0	117	10	US-09-948-391A-22	Sequence 22, Appli
30	277.5	48.0	117	10	US-09-961-400-22	Sequence 22, Appli
31	276.5	47.8	110	10	US-09-948-391A-24	Sequence 24, Appli
32	276.5	47.8	110	10	US-09-961-400-24	Sequence 24, Appli
33	276.5	47.8	111	10	US-09-948-391A-26	Sequence 26, Appli
34	276.5	47.8	111	10	US-09-961-400-26	Sequence 26, Appli
35	275.5	47.7	111	10	US-09-948-391A-17	Sequence 17, Appli
36	271.5	47.0	110	10	US-09-948-391A-19	Sequence 19, Appli
37	157.5	27.2	169	13	US-10-016-447-2	Sequence 2, Appli
38	149	25.8	119	12	US-10-016-248-89	Sequence 139, App
39	149	25.8	119	15	US-10-074-978A-139	Sequence 5, Appli
40	128.5	22.2	124	13	US-10-016-447-5	Sequence 103, App
41	125	21.6	124	12	US-10-037-417-103	Sequence 6, Appli
42	113	19.6	147	9	US-09-286-240-6	Sequence 2, Appli
43	113	19.6	147	9	US-09-863-777-2	Sequence 254, App
44	113	19.6	147	9	US-09-731-872-254	Sequence 254, App
45	113	19.6	147	10	US-09-876-997-254	

ALIGNMENTS

RESULT 1
US-09-961-400-2
; Sequence 2, Application US/09961400
; Publication No. US20030124131A1
; GENERAL INFORMATION:
; APPLICANT: RYBAK, SUSANNA M.
; APPLICANT: GOLDENBERG, DAVID M.
; APPLICANT: NEWTON, DIANNE L.
; TITLE OF INVENTION: IMMUNOCONJUGATES OF TOXINS DIRECTED AGAINST MALIGNANT
; TITLE OF INVENTION: CELLS
; FILE REFERENCE: 018733/1059
; CURRENT APPLICATION NUMBER: US/09/961,400
; CURRENT FILING DATE: 2001-09-25
; PRIOR APPLICATION NUMBER: 09/622,613
; PRIOR FILING DATE: 2000-08-17
; PRIOR APPLICATION NUMBER: PCT/US99/06641
; PRIOR FILING DATE: 1999-03-26
; PRIOR APPLICATION NUMBER: 60/079,751
; PRIOR FILING DATE: 1998-03-26
; NUMBER OF SEQ ID NOS: 43
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 2
; LENGTH: 104
; TYPE: PRT
; ORGANISM: Rana pipiens
US-09-961-400-2

Query Match	100.0%	Score 578;	DB 10;	Length 104;
Best Local Similarity	100.0%	Pred. No. 1.2e-58;		
Matches 104;	Conservative 0;	Mismatches 0;	Indels 0;	Gaps 0;
Qy	1	QDWLTFQKKHLNTRDVCNIMSNLPHCKDKNTFYISRPVKAICKGIATSKNVLTT	60	
Db	1	QDWLTFQKKHLNTRDVCNIMSNLPHCKDKNTFYISRPVKAICKGIATSKNVLTT	60	
Qy	61	SEFYLDNCNVTSRPKYKLLKSKSTNTFCVTCENQAPVHFVGVGHC	104	
Db	61	SEFYLDNCNVTSRPKYKLLKSKSTNTFCVTCENQAPVHFVGVGHC	104	

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RESULT 2
US-09-948-391A-6
; Sequence 6, Application US/09948391A
; Publication No. US20030027311A1
; GENERAL INFORMATION:
; APPLICANT: Rybak, Susanna M.
; APPLICANT: Newton, Dianne L.
; APPLICANT: The United States of America
; APPLICANT: as represented by The Secretary of the
; APPLICANT: Department of Health and Human Services
; TITLE OF INVENTION: Recombinant Anti-Tumor RNase
; FILE REFERENCE: 015280-343110US
; CURRENT APPLICATION NUMBER: US/09/948,391A
; PRIOR FILING DATE: 2002-05-10
; PRIOR FILING DATE: 1998-03-27
; PRIOR APPLICATION NUMBER: WO PCT/US99/06641
; PRIOR FILING DATE: 1999-03-26
; PRIOR APPLICATION NUMBER: US 09/622,613
; PRIOR FILING DATE: 2000-08-17
; NUMBER OF SEQ ID NOS: 43
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 6
; LENGTH: 105
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence: Rana pipiens
; OTHER INFORMATION: Ribonuclease with Met at position 1 (recombinant)
; OTHER INFORMATION: Met(-1) RapLr1
US-09-948-391A-6

Query Match 100.0%; Score 578; DB 10; Length 105;
Best Local Similarity 100.0%; Pred. No. 1.3e-58;
Matches 104; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QDWLTFQKKHLTNTRDVCNNIMSTNLFHCKDKNTFYSRPEPVKAICKGIIASKNVLT 60
Db 2 QDWLTFQKKHLTNTRDVCNNIMSTNLFHCKDKNTFYSRPEPVKAICKGIIASKNVLT 61

QY 61 SEFYLSDCNVTSRPCYKYLKSKSTNTFCVTCENQAPVHFVGVGHC 104
Db 62 SEFYLSDCNVTSRPCYKYLKSKSTNTFCVTCENQAPVHFVGVGHC 105

RESULT 3
US-09-961-400-6
; Sequence 6, Application US/09961400
; Publication No. US20030124131A1
; GENERAL INFORMATION:
; APPLICANT: RYBAK, SUSANNA M.
; APPLICANT: GOLDENBERG, DAVID M.
; APPLICANT: NEWTON, DIANNE L.
; TITLE OF INVENTION: IMMUNOCONJUGATES OF TOXINS DIRECTED AGAINST MALIGNANT
; FILE REFERENCE: 018733/1059
; CURRENT APPLICATION NUMBER: US/09/961,400
; PRIOR FILING DATE: 2001-09-25
; PRIOR APPLICATION NUMBER: 09/622,613
; PRIOR FILING DATE: 2000-08-17
; PRIOR APPLICATION NUMBER: PCT/US99/06641
; PRIOR FILING DATE: 1999-03-26
; PRIOR APPLICATION NUMBER: 60/079,751
; NUMBER OF SEQ ID NOS: 43
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 6
; LENGTH: 105
; TYPE: PRT
; ORGANISM: Rana pipiens
US-09-961-400-6

Query Match 100.0%; Score 578; DB 10; Length 105;
Best Local Similarity 100.0%; Pred. No. 1.3e-58;
Matches 104; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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Db 2 QDWLTFQKKHLTNTRDVCNNIMSTNLFHCKDKNTFYSRPEPVKAICKGIIASKNVLT 61

QY 61 SEFYLSDCNVTSRPCYKYLKSKSTNTFCVTCENQAPVHFVGVGHC 104
Db 62 SEFYLSDCNVTSRPCYKYLKSKSTNTFCVTCENQAPVHFVGVGHC 105

RESULT 4
US-09-948-391A-28
; Sequence 28, Application US/09948391A
; Publication No. US20030027311A1
; GENERAL INFORMATION:
; APPLICANT: Rybak, Susanna M.
; APPLICANT: Newton, Dianne L.
; APPLICANT: The United States of America
; APPLICANT: as represented by The Secretary of the
; APPLICANT: Department of Health and Human Services
; TITLE OF INVENTION: Recombinant Anti-Tumor RNase
; FILE REFERENCE: 015280-343110US
; CURRENT APPLICATION NUMBER: US/09/948,391A
; PRIOR FILING DATE: 2002-05-10
; PRIOR APPLICATION NUMBER: US 60/079,751
; PRIOR FILING DATE: 1998-03-27
; PRIOR APPLICATION NUMBER: WO PCT/US99/06641
; PRIOR FILING DATE: 1999-03-26
; PRIOR APPLICATION NUMBER: US 09/622,613
; PRIOR FILING DATE: 2000-08-17
; NUMBER OF SEQ ID NOS: 43
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 28
; LENGTH: 127
; TYPE: PRT
; ORGANISM: Rana pipiens
; FEATURE:
; OTHER INFORMATION: Rana pipiens ribonuclease (RapLr1) Clone 5alb cdNA
; OTHER INFORMATION: insert
US-09-948-391A-28

Query Match 100.0%; Score 578; DB 10; Length 127;
Best Local Similarity 100.0%; Pred. No. 1.6e-58;
Matches 104; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QDWLTFQKKHLTNTRDVCNNIMSTNLFHCKDKNTFYSRPEPVKAICKGIIASKNVLT 60
Db 24 QDWLTFQKKHLTNTRDVCNNIMSTNLFHCKDKNTFYSRPEPVKAICKGIIASKNVLT 83

QY 61 SEFYLSDCNVTSRPCYKYLKSKSTNTFCVTCENQAPVHFVGVGHC 104
Db 84 SEFYLSDCNVTSRPCYKYLKSKSTNTFCVTCENQAPVHFVGVGHC 127

RESULT 5
US-09-961-400-28
; Sequence 28, Application US/09961400
; Publication No. US20030124131A1
; GENERAL INFORMATION:
; APPLICANT: RYBAK, SUSANNA M.
; APPLICANT: GOLDENBERG, DAVID M.
; APPLICANT: NEWTON, DIANNE L.
; TITLE OF INVENTION: IMMUNOCONJUGATES OF TOXINS DIRECTED AGAINST MALIGNANT
; FILE REFERENCE: 018733/1059
; CURRENT APPLICATION NUMBER: US/09/961,400
; PRIOR FILING DATE: 2001-09-25
; PRIOR APPLICATION NUMBER: 09/622,613
; PRIOR FILING DATE: 2000-08-17
```

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Query Match 100.0%; Score 578; DB 10; Length 105;
Best Local Similarity 100.0%; Pred. No. 1.3e-58;
Matches 104; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QDWLTFQKKHLTNTRDVCNNIMSTNLFHCKDKNTFYSRPEPVKAICKGIIASKNVLT 60
Db 2 QDWLTFQKKHLTNTRDVCNNIMSTNLFHCKDKNTFYSRPEPVKAICKGIIASKNVLT 61

QY 61 SEFYLSDCNVTSRPCYKYLKSKSTNTFCVTCENQAPVHFVGVGHC 104
Db 62 SEFYLSDCNVTSRPCYKYLKSKSTNTFCVTCENQAPVHFVGVGHC 105

RESULT 4
US-09-948-391A-28
; Sequence 28, Application US/09948391A
; Publication No. US20030027311A1
; GENERAL INFORMATION:
; APPLICANT: Rybak, Susanna M.
; APPLICANT: Newton, Dianne L.
; APPLICANT: The United States of America
; APPLICANT: as represented by The Secretary of the
; APPLICANT: Department of Health and Human Services
; TITLE OF INVENTION: Recombinant Anti-Tumor RNase
; FILE REFERENCE: 015280-343110US
; CURRENT APPLICATION NUMBER: US/09/948,391A
; PRIOR FILING DATE: 2002-05-10
; PRIOR APPLICATION NUMBER: US 60/079,751
; PRIOR FILING DATE: 1998-03-27
; PRIOR APPLICATION NUMBER: WO PCT/US99/06641
; PRIOR FILING DATE: 1999-03-26
; PRIOR APPLICATION NUMBER: US 09/622,613
; PRIOR FILING DATE: 2000-08-17
; NUMBER OF SEQ ID NOS: 43
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 28
; LENGTH: 127
; TYPE: PRT
; ORGANISM: Rana pipiens
; FEATURE:
; OTHER INFORMATION: Rana pipiens ribonuclease (RapLr1) Clone 5alb cdNA
; OTHER INFORMATION: insert
US-09-948-391A-28

Query Match 100.0%; Score 578; DB 10; Length 127;
Best Local Similarity 100.0%; Pred. No. 1.6e-58;
Matches 104; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QDWLTFQKKHLTNTRDVCNNIMSTNLFHCKDKNTFYSRPEPVKAICKGIIASKNVLT 60
Db 24 QDWLTFQKKHLTNTRDVCNNIMSTNLFHCKDKNTFYSRPEPVKAICKGIIASKNVLT 83

QY 61 SEFYLSDCNVTSRPCYKYLKSKSTNTFCVTCENQAPVHFVGVGHC 104
Db 84 SEFYLSDCNVTSRPCYKYLKSKSTNTFCVTCENQAPVHFVGVGHC 127

RESULT 5
US-09-961-400-28
; Sequence 28, Application US/09961400
; Publication No. US20030124131A1
; GENERAL INFORMATION:
; APPLICANT: RYBAK, SUSANNA M.
; APPLICANT: GOLDENBERG, DAVID M.
; APPLICANT: NEWTON, DIANNE L.
; TITLE OF INVENTION: IMMUNOCONJUGATES OF TOXINS DIRECTED AGAINST MALIGNANT
; FILE REFERENCE: 018733/1059
; CURRENT APPLICATION NUMBER: US/09/961,400
; PRIOR FILING DATE: 2001-09-25
; PRIOR APPLICATION NUMBER: 09/622,613
; PRIOR FILING DATE: 2000-08-17
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; PRIOR APPLICATION NUMBER: PCT/US99/06641
; PRIOR FILING DATE: 1999-03-26
; PRIOR APPLICATION NUMBER: 60/079,751
; PRIOR FILING DATE: 1998-03-26
; NUMBER OF SEQ ID NOS: 43
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 28
; LENGTH: 127
; TYPE: PRT
; ORGANISM: Rana pipiens
; US-09-961-400-28

Query Match          100.0%; Score 578; DB 10; Length 127;
Best Local Similarity 100.0%; Pred. No. 1.6e-58;
Matches 104; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QDWLTFQKKHLNTRDVCNNIMSTNLFHCCKDKNTFYSRPEPVKAICKGIIASKNVLT 60
DB 24 QDWLTFQKKHLNTRDVCNNIMSTNLFHCCKDKNTFYSRPEPVKAICKGIIASKNVLT 83
QY 61 SEFYLSDCNVTSPCKYKLLKKSNTFCVTCENQAPVHFVGVGHC 104
DB 84 SEFYLSDCNVTSPCKYKLLKKSNTFCVTCENQAPVHFVGVGHC 127

RESULT 6
US-09-961-400-9
; Sequence 9, Application US/09961400
; Publication No. US20030124131A1
; GENERAL INFORMATION:
; APPLICANT: RYBAK, SUSANNA M.
; APPLICANT: GOLDENBERG, DAVID M.
; APPLICANT: NEWTON, DIANNE L.
; TITLE OF INVENTION: IMMUNOCONJUGATES OF TOXINS DIRECTED AGAINST MALIGNANT
; FILE REFERENCE: 018733/1059
; CURRENT APPLICATION NUMBER: US/09/961,400
; CURRENT FILING DATE: 2001-09-25
; PRIOR APPLICATION NUMBER: 09/622,613
; PRIOR FILING DATE: 2000-08-17
; PRIOR APPLICATION NUMBER: PCT/US99/06641
; PRIOR FILING DATE: 1999-03-26
; PRIOR APPLICATION NUMBER: 60/079,751
; PRIOR FILING DATE: 1998-03-26
; NUMBER OF SEQ ID NOS: 43
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 9
; LENGTH: 111
; TYPE: PRT
; ORGANISM: Rana pipiens
; US-09-961-400-9

Query Match          99.5%; Score 575; DB 10; Length 111;
Best Local Similarity 99.0%; Pred. No. 3e-58;
Matches 103; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

QY 1 QDWLTFQKKHLNTRDVCNNIMSTNLFHCCKDKNTFYSRPEPVKAICKGIIASKNVLT 60
DB 8 QDWLTFQKKHLNTRDVCNNILSTNLFHCCKDKNTFYSRPEPVKAICKGIIASKNVLT 67
QY 61 SEFYLSDCNVTSPCKYKLLKKSNTFCVTCENQAPVHFVGVGHC 104
DB 68 SEFYLSDCNVTSPCKYKLLKKSNTFCVTCENQAPVHFVGVGHC 111

RESULT 7
US-09-948-391A-11
; Sequence 11, Application US/09948391A
; Publication No. US20030027311A1
; GENERAL INFORMATION:
; APPLICANT: Rybak, Susanna M.
; APPLICANT: Newton, Dianne L.
; APPLICANT: The United States of America
```

```
; APPLICANT: as represented by The Secretary of the
; APPLICANT: Department of Health and Human Services
; TITLE OF INVENTION: Recombinant Anti-Tumor Rnase
; FILE REFERENCE: Q15280-343110US
; CURRENT APPLICATION NUMBER: US/09/948,391A
; CURRENT FILING DATE: 2002-05-10
; PRIOR APPLICATION NUMBER: US 60/079,751
; PRIOR FILING DATE: 1998-03-27
; PRIOR APPLICATION NUMBER: WO PCT/US99/06641
; PRIOR FILING DATE: 1999-03-26
; PRIOR APPLICATION NUMBER: US 09/622,613
; PRIOR FILING DATE: 2000-08-17
; NUMBER OF SEQ ID NOS: 43
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 11
; LENGTH: 104
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence:Rana pipiens
; OTHER INFORMATION: ribonuclease with GlnSer substitution
; OTHER INFORMATION: (recombinant Rnase1 Q15)
; US-09-948-391A-11
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Query Match          99.1%; Score 573; DB 10; Length 104;
Best Local Similarity 100.0%; Pred. No. 4.7e-58;
Matches 103; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 2 DMLTFQKKHLNTRDVCNNIMSTNLFHCCKDKNTFYSRPEPVKAICKGIIASKNVLT 61
DB 2 DMLTFQKKHLNTRDVCNNIMSTNLFHCCKDKNTFYSRPEPVKAICKGIIASKNVLT 61
QY 62 EFVLSDCNVTSPCKYKLLKKSNTFCVTCENQAPVHFVGVGHC 104
DB 62 EFVLSDCNVTSPCKYKLLKKSNTFCVTCENQAPVHFVGVGHC 104
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RESULT 8
US-09-961-400-11
; Sequence 11, Application US/09961400
; Publication No. US20030124131A1
; GENERAL INFORMATION:
; APPLICANT: RYBAK, SUSANNA M.
; APPLICANT: GOLDENBERG, DAVID M.
; APPLICANT: NEWTON, DIANNE L.
; TITLE OF INVENTION: IMMUNOCONJUGATES OF TOXINS DIRECTED AGAINST MALIGNANT
; FILE REFERENCE: 018733/1059
; CURRENT APPLICATION NUMBER: US/09/961,400
; CURRENT FILING DATE: 2001-09-25
; PRIOR APPLICATION NUMBER: 09/622,613
; PRIOR FILING DATE: 2000-08-17
; PRIOR APPLICATION NUMBER: PCT/US99/06641
; PRIOR FILING DATE: 1999-03-26
; PRIOR APPLICATION NUMBER: 60/079,751
; PRIOR FILING DATE: 1998-03-26
; NUMBER OF SEQ ID NOS: 43
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 11
; LENGTH: 104
; TYPE: PRT
; ORGANISM: Rana pipiens
; US-09-961-400-11
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Query Match          99.1%; Score 573; DB 10; Length 104;
Best Local Similarity 100.0%; Pred. No. 4.7e-58;
Matches 103; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 2 DMLTFQKKHLNTRDVCNNIMSTNLFHCCKDKNTFYSRPEPVKAICKGIIASKNVLT 61
DB 2 DMLTFQKKHLNTRDVCNNIMSTNLFHCCKDKNTFYSRPEPVKAICKGIIASKNVLT 61
QY 62 EFVLSDCNVTSPCKYKLLKKSNTFCVTCENQAPVHFVGVGHC 104
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Db 62 EFYLSDCNVTSPCKYKLLKSTNTFCVTCENQAPVHFVGVC 104
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RESULT 9
US-09-948-391A-13
; Sequence 13, Application US/09948391A
; Publication No. US20030027311A1
; GENERAL INFORMATION:
; APPLICANT: Rybak, Susanna M.
; APPLICANT: Newton, Dianne L.
; APPLICANT: The United States of America
; APPLICANT: as represented by The Secretary of the
; APPLICANT: Department of Health and Human Services
; TITLE OF INVENTION: Recombinant Anti-Tumor RNase
; FILE REFERENCE: 015280-343110US
; CURRENT APPLICATION NUMBER: US/09/948,391A
; CURRENT FILING DATE: 2002-05-10
; PRIOR APPLICATION NUMBER: US 60/079,751
; PRIOR FILING DATE: 1998-03-27
; PRIOR APPLICATION NUMBER: WO PCT/US99/06641
; PRIOR FILING DATE: 1999-03-26
; PRIOR APPLICATION NUMBER: US 09/622,613
; PRIOR FILING DATE: 2000-08-17
; NUMBER OF SEQ ID NOS: 43
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 13
; LENGTH: 105
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence:Rana pipiens
; OTHER INFORMATION: ribonuclease with Met at position 1 and Gln58r
; OTHER INFORMATION: substitution (recombinant Met(-1) RnPLR1 Q1S)
US-09-948-391A-13
Query Match 99.1%; Score 573; DB 10; Length 105;
Best Local Similarity 100.0%; Pred. No. 4.7e-58;
Matches 103; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 2 DMLTFQKKHLTNTRDVDCNNIMSTNLFHCKDKNTFYISRPVPKAIKCKGIIASKNVLTTS 61
Db 3 DMLTFQKKHLTNTRDVDCNNIMSTNLFHCKDKNTFYISRPVPKAIKCKGIIASKNVLTTS 62
QY 62 EFYLSDCNVTSPCKYKLLKSTNTFCVTCENQAPVHFVGVC 104
Db 63 EFYLSDCNVTSPCKYKLLKSTNTFCVTCENQAPVHFVGVC 105
|||||
RESULT 11
US-09-948-391A-2
; Sequence 2, Application US/09948391A
; Publication No. US20030027311A1
; GENERAL INFORMATION:
; APPLICANT: Rybak, Susanna M.
; APPLICANT: Newton, Dianne L.
; APPLICANT: The United States of America
; APPLICANT: as represented by The Secretary of the
; APPLICANT: Department of Health and Human Services
; TITLE OF INVENTION: Recombinant Anti-Tumor RNase
; FILE REFERENCE: 015280-343110US
; CURRENT APPLICATION NUMBER: US/09/948,391A
; CURRENT FILING DATE: 2002-05-10
; PRIOR APPLICATION NUMBER: US 60/079,751
; PRIOR FILING DATE: 1998-03-27
; PRIOR APPLICATION NUMBER: WO PCT/US99/06641
; PRIOR FILING DATE: 1999-03-26
; PRIOR APPLICATION NUMBER: US 09/622,613
; PRIOR FILING DATE: 2000-08-17
; NUMBER OF SEQ ID NOS: 43
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 2
; LENGTH: 104
; TYPE: PRT
; ORGANISM: Rana pipiens
; FEATURE:
; OTHER INFORMATION: ribonuclease (RnPLR1)
US-09-948-391A-2
Query Match 98.4%; Score 569; DB 10; Length 104;
Best Local Similarity 99.0%; Pred. No. 1.3e-57;
Matches 103; Conservative 0; Mismatches 1; Indels 0; Gaps 0;
QY 1 QDWLTFQKKHLTNTRDVDCNNIMSTNLFHCKDKNTFYISRPVPKAIKCKGIIASKNVLTTS 60
Db 1 QDWLTFQKKHLTNTRDVDCNNIMSTNLFHCKDKNTFYISRPVPKAIKCKGIIASKNVLTTS 60
QY 61 SEFYLSDCNVTSPCKYKLLKSTNTFCVTCENQAPVHFVGVC 104
Db 61 SEFYLSDCNVTSPCKYKLLKSTNTFCVTCENQAPVHFVGVC 104
|||||
RESULT 12
US-09-948-391A-4
; Sequence 4, Application US/09948391A
; Publication No. US20030027311A1
; GENERAL INFORMATION:
; APPLICANT: Rybak, Susanna M.
; APPLICANT: Newton, Dianne L.
; APPLICANT: The United States of America
; APPLICANT: as represented by The Secretary of the
; APPLICANT: Department of Health and Human Services
; TITLE OF INVENTION: Recombinant Anti-Tumor RNase
; FILE REFERENCE: 015280-343110US
; CURRENT APPLICATION NUMBER: US/09/948,391A
; CURRENT FILING DATE: 2002-05-10
; TYPE: PRT
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;; PRIOR APPLICATION NUMBER: US 60/079,751
;; PRIOR FILING DATE: 1998-03-27
;; PRIOR APPLICATION NUMBER: WO PCT/US99/06641
;; PRIOR FILING DATE: 1999-03-26
;; PRIOR APPLICATION NUMBER: US 09/622,613
;; PRIOR FILING DATE: 2000-08-17
;; NUMBER OF SEQ ID NOS: 43
;; SOFTWARE: Patent in Ver. 2.0
;; SEQ ID NO 4
;; LENGTH: 104
;; TYPE: PRT
;; ORGANISM: Artificial Sequence
;; FEATURE:
;; OTHER INFORMATION: Description of Artificial Sequence: Rana pipiens
;; OTHER INFORMATION: ribonuclease with Met23Leu substitution
;; OTHER INFORMATION: (recombinant RapLr1 Met23Leu)
US-09-948-391A-4

Query Match 98.4%; Score 569; DB 10; Length 104;
Best Local Similarity 98.1%; Pred. No. 1.3e-57;
Matches 102; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 QDWLTQKKHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 60
Db 1 QDWLTQKKHLNTRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 60
QY 61 SEFYSDCNVTSRCPCKYKLLKSTNTFCVTCENQAPVHFVGVC 104
Db 61 FEYLSDCNVTSPCKYKLLKSTNTFCVTCENQAPVHFVGVC 104

RESULT 13

US-09-961-400-4
;; Sequence 4, Application US/09961400
;; Publication No. US20030124131A1
;; GENERAL INFORMATION:
;; APPLICANT: RYBAK, SUSANNA M.
;; APPLICANT: GOLDENBERG, DAVID M.
;; APPLICANT: NEWTON, DIANNE L.
;; TITLE OF INVENTION: IMMUNOCONJUGATES OF TOXINS DIRECTED AGAINST MALIGNANT
;; FILE OF INVENTION: CELLS
;; FILE REFERENCE: 018733/1059
;; CURRENT APPLICATION NUMBER: US/09/961,400
;; PRIOR FILING DATE: 2001-09-25
;; PRIOR APPLICATION NUMBER: 09/622,613
;; PRIOR FILING DATE: 2000-08-17
;; PRIOR APPLICATION NUMBER: PCT/US99/06641
;; PRIOR FILING DATE: 1999-03-26
;; PRIOR APPLICATION NUMBER: 60/079,751
;; NUMBER OF SEQ ID NOS: 43
;; SOFTWARE: Patent in Ver. 2.1
;; SEQ ID NO 4
;; LENGTH: 104
;; TYPE: PRT
;; ORGANISM: Rana pipiens
US-09-961-400-4

Query Match 98.4%; Score 569; DB 10; Length 104;
Best Local Similarity 98.1%; Pred. No. 1.3e-57;
Matches 102; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 QDWLTQKKHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 60
Db 1 QDWLTQKKHLNTRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 60
QY 61 SEFYSDCNVTSRCPCKYKLLKSTNTFCVTCENQAPVHFVGVC 104
Db 61 FEYLSDCNVTSPCKYKLLKSTNTFCVTCENQAPVHFVGVC 104

RESULT 14

US-09-961-400-8

;; Sequence 8, Application US/09961400
;; Publication No. US20030124131A1
;; GENERAL INFORMATION:
;; APPLICANT: RYBAK, SUSANNA M.
;; APPLICANT: GOLDENBERG, DAVID M.
;; APPLICANT: NEWTON, DIANNE L.
;; TITLE OF INVENTION: IMMUNOCONJUGATES OF TOXINS DIRECTED AGAINST MALIGNANT
;; FILE OF INVENTION: CELLS
;; FILE REFERENCE: 018733/1059
;; CURRENT APPLICATION NUMBER: US/09/961,400
;; PRIOR FILING DATE: 2001-09-25
;; PRIOR APPLICATION NUMBER: 09/622,613
;; PRIOR FILING DATE: 2000-08-17
;; PRIOR APPLICATION NUMBER: PCT/US99/06641
;; PRIOR FILING DATE: 1999-03-26
;; PRIOR APPLICATION NUMBER: 60/079,751
;; PRIOR FILING DATE: 1998-03-26
;; NUMBER OF SEQ ID NOS: 43
;; SOFTWARE: Patent in Ver. 2.1
;; SEQ ID NO 8
;; LENGTH: 105
;; TYPE: PRT
;; ORGANISM: Rana pipiens
US-09-961-400-8

Query Match 97.8%; Score 565; DB 10; Length 105;
Best Local Similarity 97.1%; Pred. No. 3.9e-57;
Matches 101; Conservative 1; Mismatches 2; Indels 0; Gaps 0;

QY 1 QDWLTQKKHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 60
Db 2 QDWLTQKKHLNTRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 61
QY 61 SEFYSDCNVTSRCPCKYKLLKSTNTFCVTCENQAPVHFVGVC 104
Db 62 FEYLSDCNVTSPCKYKLLKSTNTFCVTCENQAPVHFVGVC 105

RESULT 15

US-09-948-391A-8
;; Sequence 8, Application US/09948391A
;; Publication No. US20030027311A1
;; GENERAL INFORMATION:
;; APPLICANT: RYBAK, SUSANNA M.
;; APPLICANT: NEWTON, DIANNE L.
;; APPLICANT: The United States of America
;; APPLICANT: as represented by The Secretary of the
;; APPLICANT: Department of Health and Human Services
;; TITLE OF INVENTION: Recombinant Anti-Tumor RNase
;; FILE REFERENCE: 015280-343110US
;; CURRENT APPLICATION NUMBER: US/09/948,391A
;; CURRENT FILING DATE: 2002-05-10
;; PRIOR APPLICATION NUMBER: US 60/079,751
;; PRIOR FILING DATE: 1998-03-27
;; PRIOR APPLICATION NUMBER: WO PCT/US99/06641
;; PRIOR FILING DATE: 1999-03-26
;; PRIOR APPLICATION NUMBER: US 09/622,613
;; PRIOR FILING DATE: 2000-08-17
;; NUMBER OF SEQ ID NOS: 43
;; SOFTWARE: Patent in Ver. 2.0
;; SEQ ID NO 8
;; LENGTH: 105
;; TYPE: PRT
;; ORGANISM: Artificial Sequence
;; FEATURE:
;; OTHER INFORMATION: Description of Artificial Sequence: Rana pipiens
;; OTHER INFORMATION: ribonuclease with Met at position 1 and Met24Leu
;; OTHER INFORMATION: substitution (recombinant Met(-1) RapLr1 Met23Leu)
US-09-948-391A-8

Query Match 96.9%; Score 560; DB 10; Length 105;
Best Local Similarity 97.1%; Pred. No. 1.5e-56;
Matches 101; Conservative 1; Mismatches 2; Indels 0; Gaps 0;

QY	1	QDWLTFQKKHLNTRDVCNNIMSTNLPHCKOKNTEIYSRPEPVKAI CKGI IASKNVLT	60
Db	2	QDWLTFQKKHLNTRDVCNNILSTNLPHCKOKNTEIYSRPEPVKAI CKGI IASKNVLT	61
QY	61	SEFYLSDCNVTSRPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC	104
Db	62	SEFYLSDCNVTSRPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC	105

Search completed: May 7, 2004, 21:51:55
Job time : 33.3695 secs

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OM protein - protein search, using sw model

Run on: May 7, 2004, 21:25:55 ; Search time 44.363 Seconds
(without alignments)
662.376 Million cell updates/sec

Title: US-09-961-400-2

Perfect score: 578

Sequence: 1 QDWLTFQKKHLNTRDVCN.....TPCVTCENQAPVHFVGVGHC 104

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 1586107 seqs, 282547505 residues

Total number of hits satisfying chosen parameters: 1586107

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : A.Geneseq_29Jan04.*
1: geneseqp1980s.*
2: geneseqp1990s.*
3: geneseqp2000s.*
4: geneseqp2001s.*
5: geneseqp2002s.*
6: geneseqp2003as.*
7: geneseqp2003bs.*
8: geneseqp2004s.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match %	Length	DB	ID	Description
1	578	100.0	104	2	AAW28865	Aay28865 Rana pipi
2	578	100.0	105	2	AAW28867	Aay28867 Recombina
3	578	100.0	127	2	AAW28879	Aay28879 Rana pipi
4	575	99.5	104	2	AAW28866	Aay28866 Recombina
5	575	99.5	105	2	AAW28869	Aay28869 Recombina
6	573	99.1	104	2	AAW28870	Aay28870 Recombina
7	573	99.1	105	2	AAW28871	Aay28871 Recombina
8	558	96.5	104	2	AAW06544	Aaw06544 Antitumou
9	556	96.2	104	2	AAW30301	Aaw30301 Recombina
10	556	96.2	104	4	AAW31666	Aab31666 Amino aci
11	556	96.2	104	5	ABG32650	Abg32650 Northern
12	556	96.2	379	2	AAW35126	Aaw35126 R. pipien
13	553	95.7	104	2	AAW12344	Aar12344 Protein w
14	553	95.7	104	2	AAW47303	Aar47303 ONCONASE
15	553	95.7	104	2	AAW00736	Aaw00736 Protein d
16	553	95.7	104	2	AAW14065	Aaw14065 Onconase
17	553	95.7	104	2	AAW06543	Aaw06543 Antitumou
18	553	95.7	104	2	AAW88233	Aaw88233 Rana pipi
19	553	95.7	104	2	AAW33322	Aay33322 Frog onco
20	553	95.7	105	2	AAW35123	Aaw35123 R. pipien
21	553	95.7	105	2	AAW39400	Aay39400 Recombina
22	553	95.7	355	2	AAW35125	Aaw35125 R. pipien
23	553	95.7	358	2	AAW35130	Aaw35130 R. pipien
24	551	95.3	106	2	AAW35122	Aaw35122 R. pipien
25	551	95.3	107	2	AAW35117	Aaw35117 R. pipien

26	551	95.3	112	2	AAW35118	Aaw35118 R. pipien
27	551	95.3	251	2	AAW35134	Aaw35134 R. pipien
28	551	95.3	254	2	AAW35135	Aaw35135 R. pipien
29	551	95.3	355	2	AAW35133	Aaw35133 R. pipien
30	551	95.3	355	2	AAW35129	Aaw35129 R. pipien
31	551	95.3	366	2	AAW35132	Aaw35132 R. pipien
32	550	95.2	104	2	AAW30302	Aaw30302 Recombina
33	548	94.8	104	2	AAW18224	Aaw18224 Antitumou
34	548	94.8	104	4	AAW31667	Aab31667 Amino aci
35	548	94.8	104	5	ABG31617	Abg31617 Northern
36	546	94.5	105	2	AAW35115	Aaw35115 R. pipien
37	546	94.5	105	2	AAW35116	Aaw35116 R. pipien
38	542	93.8	358	2	AAW35127	Aaw35127 R. pipien
39	542	93.8	365	2	AAW35131	Aaw35131 R. pipien
40	527	91.2	107	2	AAW35120	Aaw35120 R. pipien
41	490	84.8	360	2	AAW35128	Aaw35128 R. pipien
42	483.5	83.7	111	2	AAW35121	Aaw35121 R. pipien
43	445	77.0	83	2	AAW35119	Aaw35119 R. pipien
44	445	77.0	83	2	AAW88234	Aaw88234 Rana pipi
45	289	50.0	111	2	AAW33321	Aay33321 Frog lect

ALIGNMENTS

RESULT 1
AAW28865
ID AAY28865 standard; protein; 104 AA.
XX
AC AAY28865;
XX
DT 25-JAN-2000 (first entry)
XX
DE Rana pipiens liver ribonuclease (RaPLR1).
XX
KW Rana pipiens liver ribonuclease; RaPLR1; covalently bound; L12 antibody;
KW ligand binding moiety; CD22; cancerous B cell; Kaposi's Sarcoma; frog;
KW human chorionic gonadotrophin; hCG; recombinant ribonuclease; RNase;
KW signal peptide; cytotoxic fusion protein; cancer; autoimmune disease.
XX
OS Rana pipiens.
XX
FN WO950398-A2.
XX
PD 07-OCT-1999.
XX
PF 26-MAR-1999; 99WO-US006641.
XX
PR 27-MAR-1998; 98US-0079751P.
XX
(USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Rybak SM, Newton DL;
XX
DR WPI; 1999-610847/52.
XX
N-PSDB; AAZ08124.
XX
New recombinant ribonucleases, used for killing target cells, e.g. for
treating cancers, viral infections or autoimmune diseases.
XX
Claim 1; Page 55; 71pp; English.
XX
The present sequence is Rana pipiens liver ribonuclease (RaPLR1) protein.
XX Carboxy terminal end of RaPLR1 has a covalently bound ligand binding
XX moiety, which can be a L12 antibody directed against CD22 on cancerous B
XX cells or human chorionic gonadotrophin (hCG) effective against Kaposi's
XX Sarcoma cells. Recombinant ribonucleases can be expressed in bacteria
XX without an N-terminal methionine due to the presence of a signal peptide
XX that is cleaved by bacteria. The soluble expression of ribonuclease
XX allows the proteins to be fused in-frame with ligand binding moieties to
XX form cytotoxic fusion proteins. They can be used for treatment of cancer
XX and autoimmune diseases

SQ Sequence 104 AA;

Query Match 100.0%; Score 578; DB 2; Length 104;

Best Local Similarity 100.0%; Pred. No. 4.6e-62;

Matches 104; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QDLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFYSRPEPVKAICKGIASKNVLT 60
 Db 1 QDLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFYSRPEPVKAICKGIASKNVLT 60

QY 61 SEFYLSDCNVTSPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 104
 Db 61 SEFYLSDCNVTSPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 104

RESULT 2

AAY28867

ID AAY28867 standard; protein; 105 AA.

AC AAY28867;

DT 25-JAN-2000 (first entry)

DE Recombinant Met (-1) RaPLR1.

KW Recombinant Met (-1) Rana pipiens ribonuclease; RaPLR1; CD22; RNase;
 covalently bound; LL2 antibody; ligand binding moiety; cancerous B cell;
 Kaposi's sarcoma; human chorionic gonadotropin; hCG; signal peptide;
 recombinant ribonuclease; cytotoxic fusion protein; cancer; frog;
 autoimmune disease.

OS Rana pipiens.

OS Synthetic.

FH Key Location/Qualifiers

FT Misc-difference 1 /note= "Met not found in wild type RaPLR1"

PN WO9950398-A2.

XX 07-OCT-1999.

XX 26-MAR-1999; 99WO-US006641.

XX 27-MAR-1998; 98US-0079751P.

XX (USSH) US DEPT HEALTH & HUMAN SERVICES.

PA Rybak SM, Newton DL;

PI WPI; 1999-610847/52.

DR N-PSDB; AAZ08126.

XX New recombinant ribonucleases, used for killing target cells, e.g. for
 treating cancers, viral infections or autoimmune diseases.

PS Claim 34; Page 57; 71pp; English.

XX The present sequence is a recombinant Rana pipiens ribonuclease (RaPLR1)
 protein with Met at position 1. Carboxy terminal end of recombinant
 RaPLR1 has a covalently bound ligand binding moiety, which can be a LL2
 antibody directed against CD22 on cancerous B cells or human chorionic
 gonadotropin (hCG) effective against Kaposi's sarcoma cells. Recombinant
 ribonucleases can be expressed in bacteria without an N-terminal
 methionine due to the presence of a signal peptide that is cleaved by
 bacteria. The soluble expression of ribonuclease allows the proteins to
 be fused in-frame with ligand binding moieties to form cytotoxic fusion
 proteins. They can be used for treatment of cancer and autoimmune
 diseases

SQ Sequence 105 AA;

Query Match

100.0%; Score 578; DB 2; Length 105;

Best Local Similarity 100.0%; Pred. No. 4.6e-62;

Matches 104; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QDLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFYSRPEPVKAICKGIASKNVLT 60
 Db 2 QDLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFYSRPEPVKAICKGIASKNVLT 61

QY 61 SEFYLSDCNVTSPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 104
 Db 62 SEFYLSDCNVTSPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 105

RESULT 3

AAY28879

ID AAY28879 standard; protein; 127 AA.

AC AAY28879;

DT 25-JAN-2000 (first entry)

DE Rana pipiens Clone 5alb ribonuclease.

KW Rana pipiens ribonuclease Clone 5alb; RaPLR1; covalently bound; RNase;
 LL2 antibody; ligand binding moiety; CD22; cancerous B cell; onconase;
 Kaposi's Sarcoma; human chorionic gonadotropin; hCG; cancer;
 recombinant ribonuclease; frog; signal peptide; cytotoxic fusion protein;
 autoimmune disease.

OS Rana pipiens.

FH Key Location/Qualifiers

FT Peptide 1..23

FT /label= Signal_peptide

FT /note= "Putative"

FT Protein 24..127

FT /label= Rana_pipiens_Clone_5alb_ribonuclease

XX WO9950398-A2.

XX 07-OCT-1999.

XX 26-MAR-1999; 99WO-US006641.

XX 27-MAR-1998; 98US-0079751P.

XX (USSH) US DEPT HEALTH & HUMAN SERVICES.

XX Rybak SM, Newton DL;

XX WPI; 1999-610847/52.

XX N-PSDB; AAZ08136.

XX New recombinant ribonucleases, used for killing target cells, e.g. for
 treating cancers, viral infections or autoimmune diseases.

XX Disclosure; Page 69; 71pp; English.

XX The present sequence is a Rana pipiens Clone 5alb ribonuclease (RaPLR1).
 It is encoded by Clone 5alb cDNA obtained from Rana pipiens liver mRNA
 library. It exhibits differences with Onconase (RTM) at amino acid
 residues 11, 20, 85 and 103. Carboxy terminal end of RaPLR1 has a
 covalently bound ligand binding moiety, which can be a LL2 antibody
 directed against CD22 on cancerous B cells or human chorionic
 gonadotropin (hCG) effective against Kaposi's Sarcoma cells. Recombinant
 ribonucleases can be expressed in bacteria without an N-terminal
 methionine due to the presence of a signal peptide that is cleaved by
 bacteria. The soluble expression of ribonuclease allows the proteins to
 be fused in-frame with ligand binding moieties to form cytotoxic fusion
 proteins. They can be used for treatment of cancer and autoimmune
 diseases

SQ Sequence 127 AA;

Query Match 100.0%; Score 578; DB 2; Length 127;
 Best Local Similarity 100.0%; Pred. No. 5.9e-62;
 Matches 104; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QDWLTFQKHLTNTRDVDCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 60
 DB 24 QDWLTFQKHLTNTRDVDCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 83

QY 61 SEFYLSDCNVTSRPCKYKLGKSTNTFCVTCENQAPVHFVGVGHC 104
 DB 84 SEFYLSDCNVTSRPCKYKLGKSTNTFCVTCENQAPVHFVGVGHC 127

RESULT 4
 AAY28866
 ID AAY28866 standard; protein; 104 AA.
 XX
 AC AAY28866;
 DT 25-JAN-2000 (first entry)
 DE Recombinant RapLR1 Met23Leu amino acid sequence.
 XX
 KW Recombinant Rana pipiens ribonuclease; RapLR1 Met23Leu; covalently bound;
 LL2 antibody; ligand binding moiety; CD22; cancerous B cell; RNase;
 KW Kaposi's sarcoma; human chorionic gonadotropin; hCG; signal peptide;
 KW recombinant ribonuclease; cytotoxic fusion protein; cancer; frog;
 KW autoimmune disease.
 XX
 OS Rana pipiens.
 OS Synthetic.
 FH Key Location/Qualifiers
 FT Misc-difference 23 /note= "wild type Met replaced with Leu"
 FT
 FT
 XX WO9950398-A2.
 FN
 PD 07-OCT-1999.
 XX
 PF 26-MAR-1999; 99WO-US006641.
 XX
 PR 27-MAR-1998; 98US-0079751P.
 XX
 PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
 XX
 PI Rybak SM, Newton DL;
 XX
 DR WPI; 1999-610847/52.
 DR N-PSDB; AAZ08125.
 XX
 PT New recombinant ribonucleases, used for killing target cells, e.g. for
 treating cancers, viral infections or autoimmune diseases.
 XX
 PS Claim 34; Page 56; 71pp; English.
 XX
 CC The present sequence is a recombinant Rana pipiens ribonuclease (RapLR1)
 CC protein with Met23Leu. Carboxy terminal end of recombinant RapLR1 has a
 CC covalently bound ligand binding moiety, which can be a LL2 antibody
 CC directed against CD22 on cancerous B cells or human chorionic
 CC gonadotropin (hCG) effective against Kaposi's sarcoma cells. Recombinant
 CC ribonucleases can be expressed in bacteria without an N-terminal
 CC methionine due to the presence of a signal peptide that is cleaved by
 CC bacteria. The soluble expression of ribonuclease allows the proteins to
 CC be fused in-frame with ligand binding moieties to form cytotoxic fusion
 CC proteins. They can be used for treatment of cancer and autoimmune
 CC diseases
 XX
 SQ Sequence 104 AA;

Query Match 99.5%; Score 575; DB 2; Length 104;
 Best Local Similarity 99.0%; Pred. No. 1.1e-61;
 Matches 103; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

QY 1 QDWLTFQKHLTNTRDVDCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 60
 DB 1 QDWLTFQKHLTNTRDVDCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 60

QY 61 SEFYLSDCNVTSRPCKYKLGKSTNTFCVTCENQAPVHFVGVGHC 104
 DB 61 SEFYLSDCNVTSRPCKYKLGKSTNTFCVTCENQAPVHFVGVGHC 104

RESULT 5
 AAY28869
 ID AAY28869 standard; protein; 105 AA.
 XX
 AC AAY28869;
 DT 25-JAN-2000 (first entry)
 DE Recombinant Met (-1) RapLR1 Met23Leu- (His)6 protein.
 XX
 KW Recombinant Met (-1) Rana pipiens ribonuclease Met23Leu- (His)6; RapLR1;
 CD22; covalently bound; LL2 antibody; ligand binding moiety; RNase;
 KW cancerous B cell; Kaposi's sarcoma; human chorionic gonadotropin; hCG;
 KW signal peptide; recombinant ribonuclease; cytotoxic fusion protein;
 KW cancer; frog; autoimmune disease.
 XX
 OS Rana pipiens.
 OS Synthetic.
 FH Key Location/Qualifiers
 FT Misc-difference 1 /note= "Met not found in wild type RapLR1"
 FT
 FT Misc-difference 1 /note= "(His)6 histidine tag attached to N-terminal Met"
 FT
 FT Misc-difference 24 /note= "wild type Met replaced with Leu"
 FT
 XX WO9950398-A2.
 FN
 PD 07-OCT-1999.
 XX
 PF 26-MAR-1999; 99WO-US006641.
 XX
 PR 27-MAR-1998; 98US-0079751P.
 XX
 PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
 XX
 PI Rybak SM, Newton DL;
 XX
 DR WPI; 1999-610847/52.
 DR N-PSDB; AAZ08127.
 XX
 PT New recombinant ribonucleases, used for killing target cells, e.g. for
 treating cancers, viral infections or autoimmune diseases.
 XX
 PS Claim 4; Page 59; 71pp; English.
 XX
 CC The present sequence is a recombinant Rana pipiens ribonuclease protein
 CC (RapLR1) with Met at position 1 attached to (His)6 tag and Met24Leu.
 CC Carboxy terminal end of recombinant RapLR1 has a covalently bound ligand
 CC binding moiety, which can be a LL2 antibody directed against CD22 on
 CC cancerous B cells or human chorionic gonadotropin (hCG) effective
 CC against Kaposi's sarcoma cells. Recombinant ribonucleases can be
 CC expressed in bacteria without an N-terminal methionine due to the
 CC presence of a signal peptide that is cleaved by bacteria. The soluble
 CC expression of ribonuclease allows the proteins to be fused in-frame with
 CC ligand binding moieties to form cytotoxic fusion proteins. They can be
 CC used for treatment of cancer and autoimmune diseases
 XX
 SQ Sequence 105 AA;

Query Match 99.5%; Score 575; DB 2; Length 105;
 Best Local Similarity 99.0%; Pred. No. 1.1e-61;

Matches 103; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

QY 1 QDWLTQKHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTTS 60
 Db 2 QDWLTQKHLNTRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTTS 61
 QY 61 SEFYLSDCNVTSPCKYKLLKKSNTFCVTCENQAPVHFVGVGHC 104
 Db 62 SEFYLSDCNVTSPCKYKLLKKSNTFCVTCENQAPVHFVGVGHC 105

RESULT 6

AAY28870

ID AAY28870 standard; protein; 104 AA.

XX

AC AAY28870;

XX

DT 25-JAN-2000 (first entry)

XX

XX Recombinant RaPLR1 Gln1Ser amino acid sequence.

DE

KW Recombinant Rana pipiens ribonuclease; RaPLR1 Gln1Ser; covalently bound;
 KW LL2 antibody; ligand binding moiety; CD22; cancerous B cell; frog;
 KW Kaposi's sarcoma; human chorionic gonadotropin; hCG; signal peptide;
 KW recombinant ribonuclease; cytotoxic fusion protein; cancer; RNase;
 KW autoimmune disease.

XX

OS Rana pipiens.

OS

XX Synthetic.

XX

FH Key Location/Qualifiers

FT

FT Misc-difference 1 /note= "Wild type Gln replaced with Ser"

FT

XX

PN WO9950398-A2.

XX

PD 07-OCT-1999.

XX

PF 26-MAR-1999; 99WO-US006641.

XX

PR 27-MAR-1998; 98US-0079751P.

XX

XX (USSH) US DEPT HEALTH & HUMAN SERVICES.

XX

XX Rybak SM, Newton DL;

XX

DR WPI; 1999-610847/52.

DR

DR N-PSDB; AA208129.

XX

XX New recombinant ribonucleases, used for killing target cells, e.g. for

PT

PT treating cancers, viral infections or autoimmune diseases.

XX

XX Claim 34; Page 60; 71pp; English.

XX

CC The present sequence is a recombinant Rana pipiens ribonuclease (RaPLR1)
 CC protein with Gln1Ser. Carboxy terminal end of recombinant RaPLR1 has a
 CC covalently bound ligand binding moiety, which can be a LL2 antibody
 CC directed against CD22 on cancerous B cells or human chorionic
 CC gonadotropin (hCG) effective against Kaposi's sarcoma cells. Recombinant
 CC ribonucleases can be expressed in bacteria without an N-terminal
 CC methionine due to the presence of a signal peptide that is cleaved by
 CC bacteria. The soluble expression of ribonuclease allows the proteins to
 CC be fused in-frame with ligand binding moieties to form cytotoxic fusion
 CC proteins. They can be used for treatment of cancer and autoimmune
 CC diseases

XX

SQ Sequence 104 AA;

XX

Query Match 99.1%; Score 573; DB 2; Length 104;

XX

Best Local Similarity 100.0%; Pred. No. 1.9e-61;

XX

Matches 103; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

XX

QY 2 DMLTFQKHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTTS 61

Db 2 DMLTFQKHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTTS 61
 QY 62 EFYLSDCNVTSPCKYKLLKKSNTFCVTCENQAPVHFVGVGHC 104
 Db 62 EFYLSDCNVTSPCKYKLLKKSNTFCVTCENQAPVHFVGVGHC 104

RESULT 7

AAY28871

ID AAY28871 standard; protein; 105 AA.

XX

AC AAY28871;

XX

DT 25-JAN-2000 (first entry)

XX

XX Recombinant Met(-1) RaPLR1 Gln1Ser amino acid sequence.

XX

KW Recombinant Met(-1) Rana pipiens ribonuclease Gln1Ser; RaPLR1; CD22;
 KW covalently bound; LL2 antibody; ligand binding moiety; cancerous B cell;
 KW Kaposi's sarcoma; human chorionic gonadotropin; hCG; signal peptide;
 KW recombinant ribonuclease; cytotoxic fusion protein; cancer; frog;
 KW autoimmune disease; RNase.

XX

OS Rana pipiens.

OS

XX Synthetic.

XX

FH Key Location/Qualifiers

FT

FT Misc-difference 1

FT

FT Misc-difference 2 /note= "Met not found in wild type RaPLR1"

FT

XX /note= "Wild type Gln replaced with Ser"

XX

PN WO9950398-A2.

XX

PD 07-OCT-1999.

XX

PF 26-MAR-1999; 99WO-US006641.

XX

PR 27-MAR-1998; 98US-0079751P.

XX

XX (USSH) US DEPT HEALTH & HUMAN SERVICES.

XX

XX Rybak SM, Newton DL;

XX

DR WPI; 1999-610847/52.

DR

DR N-PSDB; AA208129.

XX

XX New recombinant ribonucleases, used for killing target cells, e.g. for

PT

PT treating cancers, viral infections or autoimmune diseases.

XX

XX Claim 34; Page 61; 71pp; English.

XX

CC The present sequence is a recombinant Rana pipiens ribonuclease (RaPLR1)
 CC protein with Met at position 1 and Gln2Ser. Carboxy terminal end of
 CC recombinant RaPLR1 has a covalently bound ligand binding moiety, which
 CC can be a LL2 antibody directed against CD22 on cancerous B cells or human
 CC chorionic gonadotropin (hCG) effective against Kaposi's sarcoma cells.
 CC Recombinant ribonucleases can be expressed in bacteria without an N-
 CC terminal methionine due to the presence of a signal peptide that is
 CC cleaved by bacteria. The soluble expression of ribonuclease allows the
 CC proteins to be fused in-frame with ligand binding moieties to form
 CC cytotoxic fusion proteins. They can be used for treatment of cancer and
 CC autoimmune diseases

XX

SQ Sequence 105 AA;

XX

Query Match 99.1%; Score 573; DB 2; Length 105;

XX

Best Local Similarity 100.0%; Pred. No. 1.9e-61;

XX

Matches 103; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

XX

QY 2 DMLTFQKHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTTS 61

XX (ALFA-) ALFACELL CORP.
 XX Saxena SK;
 PI WPI; 2001-167808/17.
 DR
 XX New nucleic acids encoding a ribonuclease (Rnase), useful for the precise
 PT targeting of Rnase to a predetermined cell receptor.
 XX
 PS Claim 1; Col 5-6; 7pp; English.
 XX
 CC The present sequence represents a frog ribonuclease protein (ranpirnase)
 CC (Rnase). The specification describes a synthetic ribonuclease protein, in
 CC which the addition of cysteine in the ribonuclease facilitates the
 CC chemical linking of a targeting molecule by the single reactive
 CC sulfhydryl group. The specification also describes a method for the
 CC production of ranpirnase using DNA technology instead of processing
 CC biological material. The re-engineering of the protein molecule allows
 CC easier attachment to a targeting molecule thereby making it possible for
 CC the ribonuclease to be delivered to a particular cell receptor where it
 CC might be most effective
 XX
 SQ Sequence 104 AA;

Query Match 96.2%; Score 556; DB 4; Length 104;
 Best Local Similarity 96.2%; Pred. No. 2.1e-59;
 Matches 100; Conservative 2; Mismatches 2; Indels 0; Gaps 0;
 QY 1 QDWLTQKKHLNTRDVCNINMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 60
 DB 1 QDWLTQKKHITNTRDVCNINMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 60
 QY 61 SEFYLSDCNVTSPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 104
 DB 61 SEFYLSDCNVTSPCKYKLLKSTNTFCVTCENQAPVHFVGVGSC 104

RESULT 11
 ABG32650
 ID ABG32650 standard; protein; 104 AA.
 XX
 AC ABG32650;
 XX
 DT 15-NOV-2002 (first entry)
 XX
 DE Northern leopard frog ranpirnase protein.
 XX
 KW Northern leopard frog; ranpirnase; site-directed mutation; ribonuclease.
 XX
 OS Rana pipiens.
 XX
 PN US6423515-B1.
 XX
 PD 23-JUL-2002.
 XX
 PF 14-OCT-2000; 2000US-00687748.
 XX
 PR 10-SEP-1999; 99US-00394268.
 XX
 PA (ALFA-) ALFACELL CORP.
 XX
 PI Saxena SK;
 XX
 DR WPI; 2002-664633/71.
 XX
 PT Constructing isolated nucleic acid encoding ribonuclease, by subjecting
 PT desired recombinant plasmid DNA to different site-directed mutations to
 PT produce nucleic acid, using different polymerase chain reaction
 PT protocols.
 XX
 PS Claim 1; Col 5-6; 8pp; English.
 XX

CC The present invention relates to a new method of constructing isolated
 CC nucleic acid encoding ribonuclease protein with N-terminal Met at
 CC position -1 and Glu at position 1, where its Met has been cleaved and its
 CC Glu has been autocyclised. The method of the invention involves
 CC subjecting pET11d-rOnc(Q1,M23L) plasmid DNA to two different site-
 CC directed mutations, each using overlapping PCR protocol. The method is
 CC useful for constructing an isolated nucleic acid encoding the
 CC ribonuclease. The present amino acid sequence represents the northern
 CC leopard frog ranpirnase protein of the invention
 XX
 SQ Sequence 104 AA;

Query Match 96.2%; Score 556; DB 5; Length 104;
 Best Local Similarity 96.2%; Pred. No. 2.1e-59;
 Matches 100; Conservative 2; Mismatches 2; Indels 0; Gaps 0;
 QY 1 QDWLTQKKHLNTRDVCNINMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 60
 DB 1 QDWLTQKKHITNTRDVCNINMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 60
 QY 61 SEFYLSDCNVTSPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 104
 DB 61 SEFYLSDCNVTSPCKYKLLKSTNTFCVTCENQAPVHFVGVGSC 104

RESULT 12
 AAW35126
 ID AAW35126 standard; protein; 379 AA.
 XX
 AC AAW35126;
 XX
 DT 20-APR-1998 (first entry)
 XX
 DE R. pipiens recombinant RNase rOnc fusion protein 2.
 XX
 KW RNase A; ribonuclease; cytotoxic; onconase; nOnc; immunofusion;
 KW tumour cell growth; frog.
 XX
 OS Rana pipiens.
 OS Synthetic.
 XX
 PN WO9731116-A2.
 XX
 PD 28-AUG-1997.
 XX
 PF 19-FEB-1997; 97WO-US002588.
 XX
 PR 21-FEB-1996; 96US-0011800P.
 XX
 PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
 XX
 PI Rybak SM, Newton DL, Boque L, Wlodawer A;
 XX
 DR WPI; 1997-435168/40.
 DR N-PSDB; AAT94964.
 XX
 PT Ribonuclease molecules based on native Onconase - used for killing cells,
 PT particularly tumour cells.
 XX
 PS Disclosure; Page 68; 90pp; English.
 XX
 CC Sequences AAW35125 to AAW35135 represent recombinant fusion proteins
 CC (rOnc) which are modifications of the RNase Onconase (rOnc). Such
 CC novel ribonuclease molecules are highly cytotoxic and can be used alone
 CC or to form chemical conjugates or to target recombinant immunofusions.
 CC They are used particularly for decreasing tumour cell growth. They can
 CC also be used for cell separation in vitro by selectively killing unwanted
 CC types of cells, e.g. in bone marrow prior to transplantation into a
 CC patient undergoing marrow ablation by radiation, or for killing leukaemia
 CC cells or T-cells that would cause graft versus host disease. The toxins
 CC can also be used to selectively kill unwanted cells in culture. The new
 CC ribonucleases have increased cytotoxic activity compared to nOnc and also
 CC lower immunogenicity in humans

```

XX SQ Sequence 379 AA;
Query Match 96.2%; Score 556; DB 2; Length 379;
Best Local Similarity 96.2%; Pred. No. 1.1e-58;
Matches 100; Conservative 2; Mismatches 2; Indels 0; Gaps 0;

QY 1 QDWLTFQKKHINTRDVDCDNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 60
Db 26 QDWLTFQKKHINTRDVDCDNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 85
QY 61 SEFYLSDCNVTSRPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 104
Db 86 SEFYLSDCNVTSRPCKYKLLKSTNTFCVTCENQAPVHFVGVGSC 129

RESULT 13
AAR12344
ID AAR12344 standard; protein; 104 AA.
AC AAR12344;
XX
DT 08-AUG-1991 (first entry)
DE Protein with activity against cancer cells.
XX
KW Frog eggs; Tamoxifen; Stelazine; cancer.
OS Rana pipiens.
XX
PN WO9107435-A.
XX
PD 30-MAY-1991.
XX
PF 13-NOV-1989; 89US-00436141.
XX
PR 13-NOV-1989; 89US-00436141.
PR 18-MAY-1990; 90US-00526314.
XX
PA (ALFA-) ALFACELL CORP.
XX
PI Ardelt WJ, Mikulski SM;
XX
DR WPI; 1991-178059/24.
XX
New protein from fertilised eggs of Rana pipiens - active against cancer
cells, esp. in combination with Tamoxifen or Stelazine (trifluoro-per-
azine).
XX
Claim 7; Fig 2; 33pp; English.
XX
The protein is derived from fertilised frog eggs. It has an iso-
electric point of 9.5 - 10.5, a blocked N-terminal gp. and is free of
carbohydrates. It is active against certain cancer cells. The combination
of the protein and (2-1-p-dimethylaminoethoxyphenyl)-1, 2-diphenyl-1-
butene citrate salt (Tamoxifen) is much more bio- active than the
separate entities against human pancreatic ASPC-1 adenocarcinoma, and the
combination of protein and (10-[3-(4-methyl piperazin-1-yl)-propyl]-2-
trifluoromethylphenothiazine (Stelazine) is much more reactive than the
separate entities against human lung A-549 carcinoma. Activity has also
been shown against human sub- maxillary epidermoid carcinoma A-253
cells, human ovarian adeno- carcinoma NIH-OVCAR-3 cells, human leukaemic
HL-60 cells, human COLO 320 DM cells, human LOX melanoma and human lung
squamous car- cinoma HT-520 cells
XX
SQ Sequence 104 AA;
Query Match 95.7%; Score 553; DB 2; Length 104;
Best Local Similarity 95.2%; Pred. No. 5e-59;
Matches 99; Conservative 3; Mismatches 2; Indels 0; Gaps 0;

QY 1 QDWLTFQKKHINTRDVDCDNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 60
Db 1 EDWLTFQKKHINTRDVDCDNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 60
QY 61 SEFYLSDCNVTSRPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 104
Db 61 SEFYLSDCNVTSRPCKYKLLKSTNTFCVTCENQAPVHFVGVGSC 104

RESULT 15
AAW00736
ID AAW00736 standard; protein; 104 AA.
XX
AC AAW00736;
XX
DT 25-MAR-2003 (revised)
DT 22-MAY-1997 (first entry)
XX

```

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Db 1 EDWLTFQKKHINTRDVDCDNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 60
QY 61 SEFYLSDCNVTSRPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 104
Db 61 SEFYLSDCNVTSRPCKYKLLKSTNTFCVTCENQAPVHFVGVGSC 104

RESULT 14
AAR47303
ID AAR47303 standard; protein; 104 AA.
XX
AC AAR47303;
DT 25-MAR-2003 (revised)
DT 09-SEP-1994 (first entry)
XX
DE ONCONASE (pharmaceutical protein).
XX
KW Onconase; pharmaceutical; protein; adenocarcinoma; treatment; cisplatin;
melphalan; adriamycin; ovarian cancer; ovary.
XX
OS Synthetic.
XX
PN WO9403197-A1.
XX
PD 17-FEB-1994.
XX
PF 02-JUL-1993; 93WO-US006357.
XX
PR 30-JUL-1992; 92US-00921180.
XX
PA (ALFA-) ALFACELL CORP.
XX
PI Mikulski SM, Ardelt WJ;
XX
DR WPI; 1994-065396/08.
XX
Pharmaceutical contg. Cisplatin, Melphalan or Adriamycin - active
in-vitro against OVCAR-3 human ovarian adenocarcinoma cells.
XX
Claim 7; Page 13; 18pp; English.
XX
This pharmaceutical protein (ONCONASE) is used in the production of a
bioactive pharmaceutical composition also comprising one of Cisplatin
(cis-diamminedichloroplatinum), Melphalan, (4-[bis-(2-chloroethyl)amino]
-L-phenylamine) or Adriamycin (Doxorubicin HCl). The composition has
bioactivity in vitro against OVCAR-3 human ovarian adenocarcinoma cells.
XX
(Updated on 25-MAR-2003 to correct PN field.)
XX
SQ Sequence 104 AA;
Query Match 95.7%; Score 553; DB 2; Length 104;
Best Local Similarity 95.2%; Pred. No. 5e-59;
Matches 99; Conservative 3; Mismatches 2; Indels 0; Gaps 0;

QY 1 QDWLTFQKKHINTRDVDCDNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 60
Db 1 EDWLTFQKKHINTRDVDCDNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 60
QY 61 SEFYLSDCNVTSRPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 104
Db 61 SEFYLSDCNVTSRPCKYKLLKSTNTFCVTCENQAPVHFVGVGSC 104

RESULT 15
AAW00736
ID AAW00736 standard; protein; 104 AA.
XX
AC AAW00736;
XX
DT 25-MAR-2003 (revised)
DT 22-MAY-1997 (first entry)
XX

```

```
DE Protein derived from frogs eggs.
XX
KW Rana pipiens; ovarian adenocarcinoma NIH-OVCAR03 cell; frog; egg;
KW submaxillary epidermoid carcinoma A-253 cell; tumour; human;
KW leukaemic HL-60 cell; COLO 320 DM cell; colon adenocarcinoma;
KW LOX melanoma; lung squamous carcinoma HT-520 cell.
XX
OS Rana pipiens.
XX
PN US5559212-A.
XX
PD 24-SEP-1996.
XX
PF 01-AUG-1994; 94US-00283970.
XX
PR 06-APR-1988; 88US-00178118.
PR 13-NOV-1989; 89US-00436141.
PR 03-FEB-1992; 92US-00814332.
XX
PA (ALFA-) ALFACELL CORP.
XX
PI Ardelt WJ;
XX
DR WPI; 1996-442459/44.
XX
PT New isolated Rana pipiens frog protein - useful for the treatment of
PT tumours.
XX
PS Claim 1; Col 8; 7pp; English.
XX
CC This sequence represents a protein which was prepared by homogenisation
CC of Rana pipiens frogs eggs. This protein is used for treating tumours in
CC humans. Especially this protein was active against human submaxillary
CC epidermoid carcinoma A-253 cells, human ovarian adenocarcinoma NIH-
CC OVCAR03 cells, human leukaemic HL-60 cells, human COLO 320 DM cells
CC originally isolated from colon adenocarcinoma, human LOX melanoma and
CC human lung squamous carcinoma HT-520 cells. (Updated on 25-MAR-2003 to
CC correct PF field.)
XX
SQ Sequence 104 AA;

Query Match 95.7%; Score 553; DB 2; Length 104;
Best Local Similarity 95.2%; Pred. No. 5e-59;
Matches 99; Conservative 3; Mismatches 2; Indels 0; Gaps 0;

QY 1 QDWLTQKKHLTNRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 60
Db :|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:
1 EDWLTQKKHITNRDVCDDNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 60
QY 61 SEFYLSDCNVTSRPCKYKLLKSTNTFCVTCENQAPVHFVGVC 104
Db :|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:
1 SEFYLSDCNVTSRPCKYKLLKSTNTFCVTCENQAPVHFVGVC 104

Search completed: May 7, 2004, 21:38:26
Job time : 45.363 secs
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GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.

OM protein - protein search, using sw model

Run on: May 7, 2004, 21:28:45 ; Search time 12.0636 Seconds
(without alignments)
445.066 Million cell updates/sec

Title: US-09-961-400-2
Perfect score: 578
Sequence: 1 QDWLTFQKHLNTRDVCN.....TFCVTCENQAPVHFGVGHG 104

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 389414 seqs, 51625971 residues

Total number of hits satisfying chosen parameters: 389414

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : Issued Patents AA:*
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2: /cgn2_6/prodata/2/iaa/5B_COMB.pep.*
3: /cgn2_6/prodata/2/iaa/6A_COMB.pep.*
4: /cgn2_6/prodata/2/iaa/6B_COMB.pep.*
5: /cgn2_6/prodata/2/iaa/FCUTUS_COMB.pep.*
6: /cgn2_6/prodata/2/iaa/backfiles1.pep.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	558	96.5	104	1	US-08-467-955-2
2	556	96.2	104	3	US-09-394-268-1
3	556	96.2	104	4	US-09-687-748-1
4	556	96.2	104	4	US-08-626-288-1
5	556	96.2	104	4	US-09-095-429-1
6	556	96.2	129	3	US-08-875-811-63
7	556	96.2	379	3	US-08-875-811-43
8	553	95.7	104	1	US-08-283-971-1
9	553	95.7	104	1	US-07-921-619-1
10	553	95.7	104	2	US-08-467-955-1
11	553	95.7	104	2	US-08-891-848-13
12	553	95.7	105	3	US-08-875-811-39
13	553	95.7	355	3	US-08-875-811-41
14	553	95.7	358	3	US-08-875-811-51
15	551	95.3	104	3	US-08-875-811-1
16	551	95.3	104	4	US-09-071-672-1
17	551	95.3	104	4	US-09-986-119-1
18	551	95.3	106	3	US-08-875-811-28
19	551	95.3	107	3	US-08-875-811-30
20	551	95.3	112	3	US-08-875-811-32
21	551	95.3	251	3	US-08-875-811-59
22	551	95.3	254	3	US-08-875-811-61
23	551	95.3	355	3	US-08-875-811-49
24	551	95.3	355	3	US-08-875-811-57
25	551	95.3	355	3	US-08-875-811-64
26	551	95.3	366	3	US-08-875-811-55
27	548	94.8	104	3	US-09-394-268-2

Sequence 2, Appli
Sequence 2, Appli
Sequence 2, Appli
Sequence 24, Appli
Sequence 26, Appli
Sequence 45, Appli
Sequence 53, Appli
Sequence 20, Appli
Sequence 47, Appli
Sequence 22, Appli
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Sequence 3, Appli
Sequence 3, Appli
Sequence 12, Appli
Sequence 8, Appli
Sequence 4, Appli
Sequence 2, Appli
Sequence 1, Appli

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104 4 US-08-626-288-2
104 4 US-09-095-429-2
105 3 US-08-875-811-24
105 3 US-08-875-811-26
358 3 US-08-875-811-45
365 3 US-08-875-811-53
107 3 US-08-875-811-20
360 3 US-08-875-811-22
111 3 US-08-875-811-2
83 4 US-09-071-672-3
83 4 US-09-986-119-3
111 2 US-08-891-848-12
111 3 US-08-875-811-8
114 3 US-09-223-118-4
114 3 US-09-223-118-2
114 3 US-09-223-118-1

ALIGNMENTS

RESULT 1
US-08-467-955-2
; Sequence 2, Application US/08467955
; Patent No. 5728805
; GENERAL INFORMATION:
; APPLICANT: Ardelt Ph.D, Wojciech J.
; TITLE OF INVENTION: PHARMACEUTICALS AND METHOD FOR MAKING THEM
; NUMBER OF SEQUENCES: 2
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Mark H. Jay, P.A.
; STREET: P.O. Box E
; CITY: Short Hills
; STATE: New Jersey
; COUNTRY: USA
; ZIP: 07078-0383
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent in Release #1.24
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/467,955
; FILING DATE:
; CLASSIFICATION: 435
; PRIOR APPLICATION DATA: US 07/178,118
; FILING DATE: 06-APR-1988
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 07/436,141
; FILING DATE: 13-NOV-1989
; PRIOR APPLICATION DATA: US 07/814,332
; FILING DATE: 03-FEB-1992
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 08/283,970
; FILING DATE: 01-AUG-1994
; ATTORNEY/AGENT INFORMATION:
; NAME: Jay, Mark H.
; REGISTRATION NUMBER: 27507
; REFERENCE/DOCKET NUMBER: 5007 US
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 201-912-9066
; TELEFAX: 201-912-0442
; TELEX: No. 5728805 Applicable
; INFORMATION FOR SEQ ID NO: 2:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 104 amino acids
; TYPE: amino acid
; STRANDEDNESS: single
; TOPOLOGY: linear

TOP SECRET

RESULT 5

RESULT 5

US-09-095-429-1
; Sequence 1, Application US/09095429
; Patent No. 6649393
; GENERAL INFORMATION:
; APPLICANT: Youle, Richard
; APPLICANT: Vasandani, Veena
; APPLICANT: Wu, Yon-Neng
; APPLICANT: Boix, Ester
; APPLICANT: Ardel, Wojciech
; TITLE OF INVENTION: A Mutant Form of Cytotoxic Protein Which
; TITLE OF INVENTION: Allows Production by Recombinant Methods
; NUMBER OF SEQUENCES: 3
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Townsend and Townsend and Crew
; STREET: One Market Plaza, Steuart Street Tower
; CITY: San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94105-1492
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent In Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/09/095,429
; FILING DATE:
; CLASSIFICATION:
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: 08/626,288
; FILING DATE:
; ATTORNEY/AGENT INFORMATION:
; NAME: Ran, David B.
; REGISTRATION NUMBER: 38,589
; REFERENCE/DOCKET NUMBER: 15280-267
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (415) 543-9600
; TELEFAX: (415) 543-5043
; INFORMATION FOR SEQ ID NO: 1:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 104 amino acids
; TYPE: amino acid
; STRANDEDNESS:
; TOPOLOGY: linear
; MOLECULE TYPE: protein
US-09-095-429-1

Query Match 96.2%; Score 556; DB 4; Length 104;
Best Local Similarity 96.2%; Pred. No. 3.7e-60;
Matches 100; Conservative 2; Mismatches 2; Indels 0; Gaps 0;
QY 1 QDWLTFQKKHLNTRDVCNIMSTNLFHCKDKNTFIYSRPEPVKAIKGIASKNVLTT 60
Db 1 QDWLTFQKKHLNTRDVCNIMSTNLFHCKDKNTFIYSRPEPVKAIKGIASKNVLTT 60
QY 61 SEFYLSDCNVTSPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 104
Db 61 SEFYLSDCNVTSPCKYKLLKSTNTFCVTCENQAPVHFVGVGSC 104

RESULT 6
US-08-875-811-63
; Sequence 63, Application US/08875811
; Patent No. 6045793
; GENERAL INFORMATION:
; APPLICANT: Rybak, Susanna M.
; APPLICANT: Newton, Dianne L.
; APPLICANT: Boque, Lluis
; APPLICANT: Wlodawer, Alexander
; TITLE OF INVENTION: Recombinant Ribonuclease Proteins
; NUMBER OF SEQUENCES: 64
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Townsend and Townsend and Crew LLP

; STREET: Two Embarcadero Center, Eighth Floor
; CITY: San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94111-3834
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent In Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/875,811
; FILING DATE: 19-FEB-1998
; CLASSIFICATION: 435
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: WO PCT/US97/02588
; FILING DATE: 19-FEB-1997
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 60/011,800
; FILING DATE: 21-FEB-1996
; ATTORNEY/AGENT INFORMATION:
; NAME: Paris, Susan K.
; REGISTRATION NUMBER: 41,739
; REFERENCE/DOCKET NUMBER: 015280-244100US
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (415) 576-0200
; TELEFAX: (415) 576-0300
; INFORMATION FOR SEQ ID NO: 63:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 129 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: protein
US-08-875-811-63

Query Match 96.2%; Score 556; DB 3; Length 129;
Best Local Similarity 96.2%; Pred. No. 4.9e-60;
Matches 100; Conservative 2; Mismatches 2; Indels 0; Gaps 0;
QY 1 QDWLTFQKKHLNTRDVCNIMSTNLFHCKDKNTFIYSRPEPVKAIKGIASKNVLTT 60
Db 26 QDWLTFQKKHLNTRDVCNIMSTNLFHCKDKNTFIYSRPEPVKAIKGIASKNVLTT 85
QY 61 SEFYLSDCNVTSPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 104
Db 86 SEFYLSDCNVTSPCKYKLLKSTNTFCVTCENQAPVHFVGVGSC 129

RESULT 7
US-08-875-811-43
; Sequence 43, Application US/08875811
; Patent No. 6045793
; GENERAL INFORMATION:
; APPLICANT: Rybak, Susanna M.
; APPLICANT: Newton, Dianne L.
; APPLICANT: Boque, Lluis
; APPLICANT: Wlodawer, Alexander
; TITLE OF INVENTION: Recombinant Ribonuclease Proteins
; NUMBER OF SEQUENCES: 64
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Townsend and Townsend and Crew LLP
; STREET: Two Embarcadero Center, Eighth Floor
; CITY: San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94111-3834
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent In Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/875,811

;; FILING DATE: 19-FEB-1998
;; CLASSIFICATION: 435
;; PRIOR APPLICATION DATA:
;; APPLICATION NUMBER: WO PCT/US97/02588
;; FILING DATE: 19-FEB-1997
;; PRIOR APPLICATION DATA:
;; APPLICATION NUMBER: US 60/011,800
;; FILING DATE: 21-FEB-1996
;; ATTORNEY/AGENT INFORMATION:
;; NAME: Paris, Susan K.
;; REGISTRATION NUMBER: 41,739
;; REFERENCE/DOCKET NUMBER: 015280-244100US
;; TELECOMMUNICATION INFORMATION:
;; TELEPHONE: (415) 576-0200
;; TELEFAX: (415) 576-0300
;; INFORMATION FOR SEQ ID NO: 43:
;; SEQUENCE CHARACTERISTICS:
;; LENGTH: 379 amino acids
;; TYPE: amino acid
;; TOPOLOGY: linear
;; MOLECULE TYPE: protein
US-08-875-811-43

Query Match 36.2%; Score 556; DB 3; Length 379;
Best Local Similarity 96.2%; Pred. No. 2e-59;
Matches 100; Conservative 2; Mismatches 2; Indels 0; Gaps 0;

QY 1 QDWLTFQKHLLTNRDVCNNIMSTNLFHCKDKNTFYSPPEPVKAICKGIIASKNVLTT 60
Db 26 QDWLTFQKHLLTNRDVCNNIMSTNLFHCKDKNTFYSPPEPVKAICKGIIASKNVLTT 85

QY 61 SEFYLSDCNVTSPCKYKLLKSKTNTFCVTCENQAPVHFVGVGHC 104
Db 86 SEFYLSDCNVTSPCKYKLLKSKTNTFCVTCENQAPVHFVGVGSC 129

RESULT 8
US-08-283-971-1
; Sequence 1, Application US/08283971
; Patent No. 5529775
; GENERAL INFORMATION:
; APPLICANT: Ardelt Ph.D, Wojciech J.
; APPLICANT: Mikulski, Stanislaw M.
; TITLE OF INVENTION: PHARMACEUTICAL FOR TREATING TUMORS IN HUMANS
; NUMBER OF SEQUENCES: 1
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Mark H. Jay, P.C.
; STREET: P.O. Box 020083, General Post Office
; CITY: Brooklyn
; STATE: New York
; COUNTRY: USA
; ZIP: 11202-0002
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent In Release #1.24
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/283,971
; FILING DATE:
; CLASSIFICATION: 435
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 07/921,180
; FILING DATE: 30-JUL-1992
; APPLICATION NUMBER: US 07/178,118
; FILING DATE: 06-APR-1988
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 07/436,141
; FILING DATE: 13-NOV-1989
; ATTORNEY/AGENT INFORMATION:
; NAME: Jay, Mark H.
; REGISTRATION NUMBER: 27507
; REFERENCE/DOCKET NUMBER: 5006 US

;; TELECOMMUNICATION INFORMATION:
;; TELEPHONE: 718-625-0399
;; TELEFAX: 718-625-0399
;; TELEX: No. 5529775 Applicable
;; INFORMATION FOR SEQ ID NO: 1:
;; SEQUENCE CHARACTERISTICS:
;; LENGTH: 104 amino acids
;; TYPE: amino acid
;; STRANDEDNESS: single
;; TOPOLOGY: linear
;; MOLECULE TYPE: protein
;; HYPOTHETICAL: N
;; ANTI-SENSE: N
;; FRAGMENT TYPE: N-terminal
;; ORIGINAL SOURCE:
;; ORGANISM: Rana pipiens
;; DEVELOPMENTAL STAGE: Embryo
US-08-283-971-1

Query Match 95.7%; Score 553; DB 1; Length 104;
Best Local Similarity 95.2%; Pred. No. 8.5e-60;
Matches 99; Conservative 3; Mismatches 2; Indels 0; Gaps 0;

QY 1 QDWLTFQKHLLTNRDVCNNIMSTNLFHCKDKNTFYSPPEPVKAICKGIIASKNVLTT 60
Db 1 EDWLTFQKHLLTNRDVCNNIMSTNLFHCKDKNTFYSPPEPVKAICKGIIASKNVLTT 60

QY 61 SEFYLSDCNVTSPCKYKLLKSKTNTFCVTCENQAPVHFVGVGHC 104
Db 61 SEFYLSDCNVTSPCKYKLLKSKTNTFCVTCENQAPVHFVGVGSC 104

RESULT 9
US-07-921-619-1
; Sequence 1, Application US/07921619
; Patent No. 5595734
; GENERAL INFORMATION:
; APPLICANT: Ardelt Ph.D, Wojciech J.
; APPLICANT: Mikulski, Stanislaw M.
; TITLE OF INVENTION: PHARMACEUTICAL FOR TREATING TUMORS IN HUMANS
; NUMBER OF SEQUENCES: 1
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Mark H. Jay, P.C.
; STREET: P.O. Box 020083, General Post Office
; CITY: Brooklyn
; STATE: New York
; COUNTRY: USA
; ZIP: 11202-0002
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent In Release #1.24
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/07/921,619
; FILING DATE: 19920728
; CLASSIFICATION: 530
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 07/178,118
; FILING DATE: 06-APR-1988
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 07/436,141
; FILING DATE: 13-NOV-1989
; ATTORNEY/AGENT INFORMATION:
; NAME: Jay, Mark H.
; REGISTRATION NUMBER: 27507
; REFERENCE/DOCKET NUMBER: 5005 US
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 718-625-0399
; TELEFAX: 718-625-0399
; TELEX: No. 5595734 Applicable
; INFORMATION FOR SEQ ID NO: 1:
; SEQUENCE CHARACTERISTICS:

LENGTH: 104 amino acids
TYPE: amino acid
STRANDEDNESS:
TOPOLOGY: linear
MOLECULE TYPE: protein
FEATURE:
NAME/KEY: Protein
LOCATION: 1..104
OTHER INFORMATION: /label= Onc
OTHER INFORMATION: /note= "Onconase from Rana pipiens"
US-08-891-848-13

Query Match 95.7%; Score 553; DB 2; Length 104;
Best Local Similarity 95.2%; Pred. No. 8.5e-60;
Matches 99; Conservative 3; Mismatches 2; Indels 0; Gaps 0;

QY 1 QDWLTFQKKHLTNRDVCNNIMSTNLFHCKDKNTFYSRPEPVKAICKGIIASKNVLT 60
Db :|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||
1 EDWLTFOKKHITNRDVCNNIMSTNLFHCKDKNTFYSRPEPVKAICKGIIASKNVLT 60
QY 61 SEFYSDCNVTSRPFCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 104
Db :|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||
61 SEFYSDCNVTSRPFCKYKLLKSTNTFCVTCENQAPVHFVGVGSC 104

RESULT 12

US-08-875-811-39
Sequence 39, Application US/08875811
Patent No. 6045793

GENERAL INFORMATION:
APPLICANT: Rybak, Susanna M.
APPLICANT: Newton, Dianne L.
APPLICANT: Boque, Lluís
APPLICANT: Wlodawer, Alexander
TITLE OF INVENTION: Recombinant Ribonuclease Proteins
NUMBER OF SEQUENCES: 64
CORRESPONDENCE ADDRESS:
ADDRESSEE: Townsend and Townsend and Crew LLP
STREET: Two Embarcadero Center, Eighth Floor
CITY: San Francisco
STATE: California
COUNTRY: USA
ZIP: 94111-3834

COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patent In Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/875,811
FILING DATE: 19-FEB-1998
CLASSIFICATION: 435

PRIOR APPLICATION DATA:
APPLICATION NUMBER: WO PCT/US97/02588
FILING DATE: 19-FEB-1997
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 60/011,800
FILING DATE: 21-FEB-1996
ATTORNEY/AGENT INFORMATION:
NAME: Paris, Susan K.
REGISTRATION NUMBER: 41,739

REFERENCE/DOCKET NUMBER: 015280-244100US
TELECOMMUNICATION INFORMATION:
TELEPHONE: (415) 576-0200
TELEFAX: (415) 576-0300
INFORMATION FOR SEQ ID NO: 39:
SEQUENCE CHARACTERISTICS:
LENGTH: 105 amino acids
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: protein

US-08-875-811-39

Query Match 95.7%; Score 553; DB 3; Length 105;
Best Local Similarity 95.2%; Pred. No. 8.6e-60;
Matches 99; Conservative 3; Mismatches 2; Indels 0; Gaps 0;

QY 1 QDWLTFQKKHLTNRDVCNNIMSTNLFHCKDKNTFYSRPEPVKAICKGIIASKNVLT 60
Db :|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||
2 EDWLTFOKKHITNRDVCNNIMSTNLFHCKDKNTFYSRPEPVKAICKGIIASKNVLT 61
QY 61 SEFYSDCNVTSRPFCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 104
Db :|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||
62 SEFYSDCNVTSRPFCKYKLLKSTNTFCVTCENQAPVHFVGVGSC 105

RESULT 13

US-08-875-811-41
Sequence 41, Application US/08875811
Patent No. 6045793

GENERAL INFORMATION:
APPLICANT: Rybak, Susanna M.
APPLICANT: Newton, Dianne L.
APPLICANT: Boque, Lluís
APPLICANT: Wlodawer, Alexander
TITLE OF INVENTION: Recombinant Ribonuclease Proteins
NUMBER OF SEQUENCES: 64
CORRESPONDENCE ADDRESS:
ADDRESSEE: Townsend and Townsend and Crew LLP
STREET: Two Embarcadero Center, Eighth Floor
CITY: San Francisco
STATE: California
COUNTRY: USA
ZIP: 94111-3834

COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patent In Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/875,811
FILING DATE: 19-FEB-1998
CLASSIFICATION: 435

PRIOR APPLICATION DATA:
APPLICATION NUMBER: WO PCT/US97/02588
FILING DATE: 19-FEB-1997
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 60/011,800
FILING DATE: 21-FEB-1996
ATTORNEY/AGENT INFORMATION:
NAME: Paris, Susan K.
REGISTRATION NUMBER: 41,739

REFERENCE/DOCKET NUMBER: 015280-244100US
TELECOMMUNICATION INFORMATION:
TELEPHONE: (415) 576-0200
TELEFAX: (415) 576-0300
INFORMATION FOR SEQ ID NO: 41:
SEQUENCE CHARACTERISTICS:
LENGTH: 355 amino acids
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: protein

US-08-875-811-41

Query Match 95.7%; Score 553; DB 3; Length 355;
Best Local Similarity 95.2%; Pred. No. 4.2e-59;
Matches 99; Conservative 3; Mismatches 2; Indels 0; Gaps 0;

QY 1 QDWLTFQKKHLTNRDVCNNIMSTNLFHCKDKNTFYSRPEPVKAICKGIIASKNVLT 60
Db :|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||
252 EDWLTFOKKHITNRDVCNNIMSTNLFHCKDKNTFYSRPEPVKAICKGIIASKNVLT 311
QY 61 SEFYSDCNVTSRPFCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 104
Db :|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||
312 SEFYSDCNVTSRPFCKYKLLKSTNTFCVTCENQAPVHFVGVGSC 355

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RESULT 15
US-08-875-811-1
; Sequence 1, Application US/08875811
; Patent No. 6045793
; GENERAL INFORMATION:
; APPLICANT: Rybak, Susanna M.
; APPLICANT: Newton, Dianne L.
; APPLICANT: Boque, Lluis
; APPLICANT: Wlodawer, Alexander
; TITLE OF INVENTION: Recombinant Ribonuclease Proteins
; NUMBER OF SEQUENCES: 64

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GenCore version 5.1.6
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OM protein - protein search, using sw model

Run on: May 7, 2004, 21:30:40 ; Search time 5.25351 Seconds
(without alignments)
1030.796 Million cell updates/sec

Title: US-09-961-400-2

Perfect score: 578

Sequence: 1 QDWLTFQKKHLNTRDVCN.....TFCVTCENQAPVHFVGVGHC 104

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 141681 seqs, 52070155 residues

Total number of hits satisfying chosen parameters: 141681

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database : SwissProt_42.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match %	Length	ID	Description
1	556	96.2	104	1 RN30 RANPI	P22069 rana pipien
2	292	50.5	133	1 RNPO RANCA	P11916 rana catesb
3	285.5	49.4	111	1 LECS RANJA	P11839 rana japoni
4	269.5	46.6	111	1 RNPL RANCA	P14626 rana catesb
5	149	25.8	119	1 RNP IGUG	P80287 iguana igua
6	131	22.7	124	1 RNP GALTU	P00680 galea muste
7	130.5	22.6	145	1 ANGR MOUSE	Q64438 mus musculu
8	130.5	22.6	146	1 ANGR CERAE	Q8wn66 cercoptithe
9	128	22.1	148	1 ANGI BOVIN	P10152 bos taurus
10	126	21.8	128	1 RNP MYOCO	P00676 myocastor c
11	125	21.6	124	1 RNP BALAC	P00673 balaeopter
12	121.5	21.0	146	1 ANGI MACMU	Q8wn63 macaca mula
13	120	20.8	128	1 RNP PROGU	P04059 proechinys
14	119.5	20.7	145	1 ANGI MOUSE	P21570 mus musculu
15	119	20.6	128	1 RNPE CAVPO	P00679 cavia porce
16	118.5	20.5	146	1 ANGI PAPHA	Q8wn64 papio hamad
17	117	20.2	124	1 RNP CHIBR	P00675 chinchilla
18	116	20.1	125	1 ANGI RABIT	P11347 oryctolagus
19	116	20.1	128	1 RNP HYDHY	P00677 hydrochoeru
20	114	19.7	124	1 RNP HIPFAM	P00672 hippopotamu
21	114	19.7	146	1 ANGI MIOTA	Q8wn65 miopotithec
22	113.5	19.6	147	1 RNS4 PANTR	Q8hzq0 pan troglod
23	113	19.6	147	1 ANGI HUMAN	P03950 homo sapien
24	113	19.6	147	1 ANGI PANTR	Q8wn68 pan troglod
25	112	19.4	124	1 RNP FIG	P00671 sus scrofa
26	112	19.4	150	1 RNP BOVIN	P00656 bos taurus
27	112	19.4	156	1 RNP MYOGL	Q9wus1 myoxus glis
28	111.5	19.3	147	1 RNS4 HUMAN	P34096 homo sapien
29	111	19.2	128	1 RNP HORSE	P00674 equus cabal
30	111	19.2	128	1 RNP HYSCR	P04060 hystrix cri
31	111	19.2	156	1 ECP3 MOUSE	C35290 mus musculu
32	111	19.2	167	1 RNBR BOVIN	P39873 bos taurus
33	110.5	19.1	123	1 ANGI_PIG	P31346 sus scrofa

RESULT 1

ID	RN30 RANPI	STANDARD;	PRT;	104 AA.
AC	P22069;			
DT	01-AUG-1991 (Rel. 19, Created)			
DT	01-FEB-1994 (Rel. 28, Last sequence update)			
DT	28-FEB-2003 (Rel. 41, Last annotation update)			
DE	P-30 protein (EC 3.1.27.-) (Onconase).			
OS	Rana pipiens (Northern leopard frog).			
OC	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;			
OC	Amphibia; Batrachia; Anura; Neobatrachia; Ranoidea; Ranidae; Rana.			
OX	NCBI_TaxID=8404;			
RN	[1]			
RP	SEQUENCE.			
RC	TISSUE=Embryo;			
RX	MEDLINE=91093131; PubMed=1985896;			
RA	Ardelt W., Mikulski S.M., Shogen K.;			
RT	"Amino acid sequence of an anti-tumor protein from Rana pipiens oocytes and early embryos. Homology to pancreatic ribonucleases.";			
RL	J. Biol. Chem. 266:245-251(1991).			
RN	[2]			
RP	3D-STRUCTURE MODELING.			
RX	MEDLINE=93066156; PubMed=1438177;			
RA	Mosmann S.C., Johns K.L., Ardelt W., Mikulski S.M., Shogen K., James M.N.G.;			
RT	"Comparative molecular modeling and crystallization of P-30 protein: A novel antitumor protein of Rana pipiens oocytes and early embryos.";			
RL	Proteins 14:392-400(1992).			
RN	[3]			
RP	X-RAY CRYSTALLOGRAPHY (1.7 ANGSTROMS).			
RX	MEDLINE=94166079; PubMed=8120892;			
RA	Mosmann S.C., Ardelt W., James M.N.G.;			
RT	"Refined 1.7 A X-ray crystallographic structure of P-30 protein, an amphibian ribonuclease with anti-tumor activity.";			
RL	J. Mol. Biol. 236:1141-1153(1994).			
CC	-!- FUNCTION: Basic protein with antiproliferative/cytotoxic activity against several tumor cell lines in vitro, as well as antitumor in vivo. It exhibits a ribonuclease-like activity against high molecular weight ribosomal RNA.			
CC	-!- DEVELOPMENTAL STAGE: Early embryos (up to four blastomere stage).			
CC	-!- SIMILARITY: Belongs to the pancreatic ribonuclease family.			
DR	PDB; 1ONC; 31-JAN-94.			
DR	InterPro; IPR001427; RNaseA.			
DR	Pfam; PF00074; rnasea; 1.			
DR	ProDom; PD000535; RNaseA; 1.			
DR	SMART; SM00092; RNase_Pc; 1.			
DR	PROSITE; PS00127; RNASE_PANCREATIC; 1.			
KW	Hydrolase; Nuclease; Endonuclease; 3D-structure; Pyridolone carboxylic acid.			
FT	MOD RES	1	1	PYRROLIDONE CARBOXYLIC ACID.
FT	ACT SITE	10	10	
FT	ACT_SITE	31	31	
FT	ACT_SITE	97	97	
FT	DISULFID	19	68	
FT	DISULFID	30	75	

34	110.5	19.1	155	1	ECPI_MOUSE	P97426 mus musculu
35	110	19.0	141	1	RNBR_GIRCA	Q29542 giraffa cam
36	110	19.0	146	1	ANGI_SAGOB	Q8wn62 saguinus oe
37	110	19.0	151	1	RNBR_AXIPR	P87350 axis porcin
38	109	18.9	123	1	ANG2_BOVIN	P80929 bos taurus
39	109	18.9	124	1	RNPA_CAVPO	P00678 cavia porce
40	109	18.9	124	1	RNP_AEPME	F07847 aepyceros m
41	109	18.9	124	1	RNP_ANTAM	P00668 antilocapra
42	109	18.9	124	1	RNP_SHEEP	P00661 ovis aries
43	109	18.9	146	1	ANGI_SALISC	Q8wn60 saimiri sci
44	108.5	18.8	150	1	RNS6_SALISC	O46529 saimiri sci
45	108	18.7	124	1	RNP_BUBBU	P00657 bubalus bub

ALIGNMENTS

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FT DISULFID 48 90
FT DISULFID 87 104
FT HELIX 3 10
FT STRAND 11 12
FT STRAND 19 22
FT TURN 23 24
FT TURN 26 30
FT STRAND 33 38
FT STRAND 41 45
FT HELIX 46 48
FT TURN 49 50
FT STRAND 55 58
FT STRAND 63 70
FT TURN 74 75
FT STRAND 77 84
FT STRAND 86 91
FT TURN 92 93
FT TURN 94 101
SQ SEQUENCE 104 AA; 11845 MW; 22A753C2F9B566B4 CRC64;

Query Match 96.2%; Score 556; DB 1; Length 104;
Best Local Similarity 96.2%; Pred. No. 8.7e-53;
Matches 100; Conservative 2; Mismatches 2; Indels 0; Gaps 0;

QY 1 QDMLTFQKHLLTNRDVCNNIMSTNLFHCKDKNTFYSRPEPVKAICKGIIASKNVLT 60
Db 1 QDMLTFQKHLLTNRDVCNNIMSTNLFHCKDKNTFYSRPEPVKAICKGIIASKNVLT 60

QY 61 SEFYLSDCNVTSPCKYKLLKSNITFCVTCENQAPVHFVGVGHC 104
Db 61 SEFYLSDCNVTSPCKYKLLKSNITFCVTCENQAPVHFVGVGSC 104

RESULT 2
RNPO RANCA
ID RNPO RANCA STANDARD; PRT; 133 AA.
AC P11916; Q9PWR7;
DT 01-OCT-1989 (Rel. 12, Created)
DT 10-OCT-2003 (Rel. 42, Last sequence update)
DT 10-OCT-2003 (Rel. 42, Last annotation update)
DE Ribonuclease, oocytes precursor (EC 3.1.27.-) (RC-RNase) (Sialic acid-
DE binding lectin) (SBL-C).
GN RCR.
OS Rana catesbeiana (Bull frog).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Amphibia; Batrachia; Anura; Neobatrachia; Ranioidea; Ranidae; Rana.
OX NCBI_TaxID=8400;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=Liver;
RX MEDLINE=98165825; PubMed=9497370;
RA Huang H.C., Wang S.C., Leu Y.J., Lu S.C., Liao Y.D.;
RT "The Rana catesbeiana rcr gene encoding a cytotoxic ribonuclease.
RT Tissue distribution, cloning, purification, cytotoxicity, and active
RT residues for RNase activity.";
RL J. Biol. Chem. 273:6395-6401(1998).
RN [2]
RP SEQUENCE OF 23-133.
RC TISSUE=Egg;
RX MEDLINE=87299649; PubMed=3304421;
RA Titani K., Takio K., Kuwada M., Nitta K., Sakakibara F., Kawauchi H.,
RA Takayanagi Y., Hakomori S.;
RT "Amino acid sequence of sialic acid binding lectin from frog (Rana
RT catesbeiana) eggs.";
RL Biochemistry 26:2189-2194(1987).
RN [3]
RP CHARACTERIZATION, AND SEQUENCE OF 81-101.
RX MEDLINE=92220613; PubMed=1373237;
RA Liao Y.-D.;
RT "A pyrimidine-guanine sequence-specific ribonuclease from Rana
RT catesbeiana (bullfrog) oocytes.";
RL Nucleic Acids Res. 20:1371-1377(1992).
RN [4]

```

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RP CHARACTERIZATION.
RC TISSUE=Egg;
RX MEDLINE=93192604; PubMed=8448385;
RA Nitta K., Oyama F., Oyama R., Sekiguchi K., Kawauchi H.,
RA Takayanagi Y., Hakomori S., Titani K.;
RT "Ribonuclease activity of sialic acid-binding lectin from Rana
RT catesbeiana eggs.";
RL Glycobiology 3:37-45(1993).
RN [5]
RP STRUCTURE BY NMR OF 23-133.
RX MEDLINE=98437383; PubMed=9761686;
RA Chang C.-F., Chen C., Chen Y.-C., Hom K., Huang R.-F., Huang T.H.;
RT "The solution structure of a cytotoxic ribonuclease from the oocytes
RT of Rana catesbeiana (bullfrog).";
RL J. Mol. Biol. 283:231-244(1998).
CC -1- FUNCTION: Preferentially cleaves single-stranded RNA at pyrimidine
CC residues with a 3'flanking guanine. Hydrolyzes poly(U) and poly(C)
CC as substrates, and prefers the former. The S-lectins in frog eggs
CC may be involved in the fertilization and development of the frog
CC embryo. This lectin agglutinates various animal cells, including
CC normal lymphocytes, erythrocytes, and fibroblasts of animal and
CC human origin. It is cytotoxic against several tumor cells.
CC -1- SUBUNIT: Monomer.
CC -1- SUBCELLULAR LOCATION: Secreted.
CC -1- SIMILARITY: Belongs to the pancreatic ribonuclease family.
CC -----
CC This SWISS-PROT entry is copyright. It is produced through a collaboration
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CC entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC or send an email to license@isb-sib.ch).
CC -----
DR EMBL; AF039104; AAD10702.1; -
DR PIR; A27121; A27121.
DR PDB; 1BC4; 28-OCT-98.
DR PDB; 1M07; 21-JAN-03.
DR InterPro; IPR001427; RNaseA.
DR Pfam; PF00074; rnaseA; 1.
DR ProDom; PD000535; RNaseA; 1.
DR SMART; SM00092; RNase PC; 1.
DR PROSITE; PS00127; RNASE_PANCREATIC; 1.
KW Hydrolase; Nuclease; Endonuclease; Sialic acid; Lectin; 3D-structure;
KW signal; Pyrrolidone carboxylic acid.
FT SIGNAL 1 22
FT CHAIN 23 133 RIBONUCLEASE, OOCYTES.
FT MOD_RES 23 23 PYRROLIDONE CARBOXYLIC ACID.
FT ACT_SITE 32 32
FT ACT_SITE 57 57
FT ACT_SITE 125 125
FT DISULFID 41 93
FT DISULFID 56 103
FT DISULFID 74 118
FT DISULFID 115 132
FT HELIX 25 32
FT HELIX 41 45
FT TURN 48 49
FT STRAND 59 63
FT HELIX 67 73
FT TURN 74 74
FT STRAND 79 84
FT STRAND 90 95
FT STRAND 105 110
FT STRAND 114 119
FT TURN 120 121
FT STRAND 122 129
SQ SEQUENCE 133 AA; 14762 MW; A7D62594F7D16F0C CRC64;

Query Match 50.5%; Score 292; DB 1; Length 133;
Best Local Similarity 49.5%; Pred. No. 2e-24;
Matches 55; Conservative 16; Mismatches 32; Indels 8; Gaps 3;

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RESULT 4	
RNPL_RANCA	
ID_RNPL_RANCA	STANDARD;
AC P14626;	PRT; 111 AA.

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RESULT 5
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ID RNP_IGUGI STANDARD; PRT; 119 AA.
AC P80287;
DT 01-FEB-1994 (Rel. 28, Created)
DT 01-FEB-1994 (Rel. 28, Last sequence update)
DT 28-FEB-2003 (Rel. 41, Last annotation update)
DE Ribonuclease pancreatic (EC 3.1.27.5) (RNase 1) (RNase A) .
OS Igwana igwana (Common igwana).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Lepidosauria; Squamata; Iguania; Iguanidae; Iguaninae; Iguana.
OX NCBI_TaxID=8517;
RN [1]
RP SEQUENCE.
RC TISSUE=Pancreas;
RX MEDLINE=94139745; PubMed=9307028;
RA Zhao W., Beintema J.J., Hofsteenge J.;
RT "The amino acid sequence of igwana (Iguana iguana) pancreatic
RT ribonuclease.";
RT Eur. J. Biochem. 219:641-646(1994).

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CC -!- CATALYTIC ACTIVITY: Endonucleolytic cleavage to nucleoside 3'-
 CC phosphates and 3'-phosphooligonucleotides ending in C-P or U-P
 CC with 2',3'-cyclic phosphate intermediates.
 CC -!- SUBCELLULAR LOCATION: Secreted.
 CC -!- TISSUE SPECIFICITY: Pancreas.
 CC -!- SIMILARITY: Belongs to the pancreatic ribonuclease family.
 DR HSP; P00656; IL5Q.
 DR InterPro: IPR001427; RNaseA.
 DR PRINTS; PR00794; RNaseA; 1.
 DR ProDom; PD000535; RNaseA; 1.
 DR SMART; SM00092; RNaseA; 1.
 DR PROSITE; PS00127; RNase PANCREATIC; 1.
 KW Hydrolase; Nuclease; Endonuclease; Pyridoxone carboxylic acid.
 FT MOD_RES 1 1 PYRROLIDONE CARBOXYLIC ACID.
 FT DISULFID 25 80 BY SIMILARITY.
 FT DISULFID 39 91 BY SIMILARITY.
 FT DISULFID 57 106 BY SIMILARITY.
 FT ACT_SITE 10 10 BY SIMILARITY.
 FT ACT_SITE 40 40 BY SIMILARITY.
 FT ACT_SITE 113 113 BY SIMILARITY.
 SQ SEQUENCE 119 AA; 13324 MW; 6072FBS7B15BD5A CRC64;
 Query Match 25.8%; Score 149; DB 1; Length 119;
 Best Local Similarity 30.7%; Pred. No. 3.5e-09;
 Matches 35; Conservative 19; Mismatches 44; Indels 16; Gaps 5;
 QY 1 QDWLTFQKKHL-----TNRDVCNNIM---STNLFHCKDKNTFYSPREPVKAIK--K 49
 Db 1 QDWSSFNKHIDYFETASNPAYCDLMQRRNLPTKCKTRNTFVHASPSEIQVCGSG 60
 QY 50 GILASKNVLTSB-FYLSDC-----NVTSPCKYKLSKSTNTFCVTCENQAPVHF 98
 Db 61 GTHYENLYDSNESFLDCKNVTGAPSCCKYNGTPTGTRKIACENNQVHF 114
 RESULT 6
 RNP GALMU
 ID - RNP GALMU STANDARD; PRT; 124 AA.
 AC P00680;
 DT 21-JUL-1986 (Rel. 01, Created)
 DT 21-JUL-1986 (Rel. 01, Last sequence update)
 DT 28-FEB-2003 (Rel. 41, Last annotation update)
 DE Ribonuclease pancreatic (EC 3.1.27.5) (RNase 1) (RNase A).
 GN RNASE1 OR RNS1.
 OS Galea musteloides (Cuis).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Rodentia; Hystricognathi; Caviidae; Galea.
 OX NCBI_TaxID=10146;
 RN [1]
 RP SEQUENCE.
 RX MEDLINE=87036770; PubMed=6571219;
 RA Beintema J.J., Neuteboom B.;
 RT "Origin of the duplicated ribonuclease gene in guinea-pig: comparison
 RT of the amino acid sequences with those of two close relatives:
 RT capybara and cuis ribonuclease";
 RL J. Mol. Evol. 19:145-152(1983).
 CC -!- CATALYTIC ACTIVITY: Endonucleolytic cleavage to nucleoside 3'-
 CC phosphates and 3'-phosphooligonucleotides ending in C-P or U-P
 CC with 2',3'-cyclic phosphate intermediates.
 CC -!- SUBCELLULAR LOCATION: Secreted.
 CC -!- TISSUE SPECIFICITY: Pancreas.
 CC -!- SIMILARITY: Belongs to the pancreatic ribonuclease family.
 DR PIR; A00827; NRUI.
 DR HSP; P00656; LSRN.
 DR InterPro: IPR001427; RNaseA.
 DR Pfam; PF00074; RNaseA; 1.
 DR PRINTS; PR00794; RIBONUCLEASE.
 DR ProDom; PD000535; RNaseA; 1.
 DR SMART; SM00092; RNaseA; 1.
 DR PROSITE; PS00127; RNase PANCREATIC; 1.
 KW Hydrolase; Nuclease; Endonuclease.

FT DISULFID 26 84 BY SIMILARITY.
 FT DISULFID 40 95 BY SIMILARITY.
 FT DISULFID 58 110 BY SIMILARITY.
 FT DISULFID 65 72 BY SIMILARITY.
 FT ACT_SITE 12 12 BY SIMILARITY.
 FT ACT_SITE 41 41 BY SIMILARITY.
 FT ACT_SITE 119 119 BY SIMILARITY.
 SQ SEQUENCE 124 AA; 13870 MW; 609C7E251A7BBA25 CRC64;
 Query Match 22.7%; Score 131; DB 1; Length 124;
 Best Local Similarity 30.6%; Pred. No. 3.1e-07;
 Matches 37; Conservative 18; Mismatches 34; Indels 32; Gaps 7;
 QY 4 LTFQKKHL-----TNRDVCNNIM---STNLFHCKDKNTFYSPREPVKAIKCGIIA 53
 Db 6 MKFORQHMDSDGHPDNTN--YCNEMVRESMTQGRCKPNTFVHLEAVQAVC---S 59
 QY 54 SKNV-----LITSEFYLSDCNVTSP-----CKYKLSKSTNTFCVTCEN--QAPVH 97
 Db 60 QKNVPCKNGQTCYQSHSSMRITDCRVTSKSKYPNCYSRMTQAKSIIVACEGTPSPVPH 119
 QY 98 F 98
 Db 120 F 120
 RESULT 7
 ANGR MOUSE
 ID - ANGR MOUSE STANDARD; PRT; 145 AA.
 AC Q6439;
 DT 01-NOV-1997 (Rel. 35, Created)
 DT 01-NOV-1997 (Rel. 35, Last sequence update)
 DT 28-FEB-2003 (Rel. 41, Last annotation update)
 DE Angiogenin-related protein precursor.
 GN ANGRP.
 OS Mus musculus (Mouse).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
 OX NCBI_TaxID=10090;
 RN [1]
 RP SEQUENCE FROM N.A.
 RX STRAIN=129; TISSUE=Liver;
 RX MEDLINE=96079109; PubMed=8530072;
 RA Brown W.E., Nobile V., Subramanian V., Shapiro R.;
 RT "The mouse angiogenin gene family: structures of an angiogenin-related
 RT protein gene and two pseudogenes";
 RL Genomics 29:200-206(1995).
 CC -!- SIMILARITY: Belongs to the pancreatic ribonuclease family.
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 CC EMBL; U22519; AAA91367.1; -
 DR HSP; P03950; 1A4Y.
 DR MGD; MGI:104984; Angrp.
 DR InterPro: IPR001427; RNaseA.
 DR Pfam; PF00074; RNaseA; 1.
 DR PRINTS; PR00794; RIBONUCLEASE.
 DR ProDom; PD000535; RNaseA; 1.
 DR SMART; SM00092; RNaseA; 1.
 DR PROSITE; PS00127; RNase PANCREATIC; 1.
 KW Signal; Hydrolase; Nuclease; Endonuclease;
 KW Pyridoxone carboxylic acid.
 FT SIGNAL 1 24 POTENTIAL.
 FT CHAIN 25 145 ANGIOGENIN-RELATED PROTEIN.
 FT MOD_RES 25 25 PYRROLIDONE CARBOXYLIC ACID (BY
 FT SIMILARITY).

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FT ACT SITE 37 37 BY SIMILARITY.
FT ACT SITE 64 64 BY SIMILARITY.
FT ACT SITE 137 137 BY SIMILARITY.
FT DISULFID 50 104 BY SIMILARITY.
FT DISULFID 63 115 BY SIMILARITY.
FT DISULFID 81 130 BY SIMILARITY.
SQ SEQUENCE 145 AA; 16612 MW; 29A6EB814429C4AD CRC64;

Query Match 22.6%; Score 130.5; DB 1; Length 145;
Best Local Similarity 38.2%; Pred. No. 4.1e-07;
Matches 29; Conservative 11; Mismatches 29; Indels 7; Gaps 3;

QY 30 CKDKNTFYISRPPEPVKAIC--KGIIASKNV-LTTSEFYLSDCNVTSR-----PCKYKLKKS 82
Db 63 CKDVNTFIHDTKNNIKAICGKGSYPGRNLRISKRQVTTCTHKGRSPRPCCRYRASKG 122

QY 83 TMTFCVTCENQAPVHF 98
Db 123 FRYIIIGCENGWVHF 138

RESULT 8
ANGI_CERAE
ID ANGI_CERAE STANDARD; PRT; 146 AA.
AC Q8WN66;
DT 28-FEB-2003 (Rel. 41, Created)
DT 28-FEB-2003 (Rel. 41, Last sequence update)
DT 28-FEB-2003 (Rel. 41, Last annotation update)
DE Angiogenin precursor (EC 3.1.27.-) (Ribonuclease 5) (RNase 5).
GN ANG OR RNASE5.
OS Cercopithecus aethiops (Green monkey) (Grivet).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Cercopithecidae;
OC Cercopithecinae; Cercopithecus.
OX NCBI_TaxID=9534;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=21918422; PubMed=11919285;
RA Zhang J., Rosenberg H.F.;
RT "Diversifying selection of the tumor-growth promoter angiogenin in
RT primate evolution.";
RL Mol. Biol. Evol. 19:438-445(2002).
CC -!- FUNCTION: May function as a tRNA-specific ribonuclease that binds
CC to actin on the surface of endothelial cells; once bound,
CC angiogenin is endocytosed and translocated to the nucleus, thereby
CC promoting the endothelial invasiveness necessary for blood vessel
CC formation. Angiogenin induces vascularization of normal and
CC malignant tissues. Abolishes protein synthesis by specifically
CC hydrolyzing cellular tRNAs (By similarity).
CC -!- SUBCELLULAR LOCATION: Secreted.
CC -!- SIMILARITY: Belongs to the pancreatic ribonuclease family.
CC
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CC or send an email to license@isb-sib.ch).
CC
CC EMBL; AF441564; AAL61646.1; -.
CC InterPro; IPR001427; RNaseA.
CC Pfam; PF00074; rnaaseA; 1.
CC PRINTS; PR00794; RIBONUCLEASE.
CC ProDom; PD000535; RNaseA; 1.
CC SMART; SM00092; RNase_Fc; 1.
CC PROSITE; PS00127; RNASE_PANCREATIC; 1.
CC Hydrolase; Nuclease; Endonuclease; Angiogenesis;
CC Protein synthesis inhibitor; Signal; Pyrrolidone carboxylic acid.
CC SIGNAL 1 24
CC CHAIN 25 146 ANGIOGENIN.
CC FT MOD_RES 25 25 PYRROLIDONE CARBOXYLIC ACID (BY
CC SIMILARITY).

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FT ACT SITE 37 37 BY SIMILARITY.
FT ACT SITE 64 64 BY SIMILARITY.
FT ACT SITE 138 138 BY SIMILARITY.
FT DISULFID 50 105 BY SIMILARITY.
FT DISULFID 63 116 BY SIMILARITY.
FT DISULFID 81 131 BY SIMILARITY.
SQ SEQUENCE 146 AA; 16444 MW; 27860112B85B8DF9 CRC64;

Query Match 22.6%; Score 130.5; DB 1; Length 146;
Best Local Similarity 30.7%; Pred. No. 4.2e-07;
Matches 31; Conservative 17; Mismatches 30; Indels 23; Gaps 4;

QY 5 TFQKKHLNTRDVDCCNIMSTNLFHCKDKNTFYISRPPEPVKAIC---KGIIASKNV-LTT 60
Db 53 TMRRHRLTSP-----CKDINTFHGRNHHIKAICGDCNGNYPYGENLRISK 97

QY 61 SEFYLSDCNVTST---RPCKYKLKKSNTTFCVTCENQAPVH 97
Db 98 SPFQVTTNLCRGSPRPCCQYRATRGSRNIVVGCENGLPVH 138

RESULT 9
ANGI_BOVIN
ID ANGI_BOVIN STANDARD; PRT; 148 AA.
AC P10152; Q9GKP9;
DT 01-MAR-1989 (Rel. 10, Created)
DT 28-FEB-2003 (Rel. 41, Last sequence update)
DT 15-MAR-2004 (Rel. 43, Last annotation update)
DE Angiogenin-1 precursor (EC 3.1.27.-).
GN ANGI OR ANG.
OS Bos taurus (Bovine).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
OC Bovidae; Bovinae; Bos.
OX NCBI_TaxID=9913;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=89065101; PubMed=3197838;
RA Maes P., Damart D., Rommens C., Montreuil J., Spik G., Tartar A.;
RT "The complete amino acid sequence of bovine milk angiogenin.";
RL FEBS Lett. 241:41-45(1988).
RN [3]
RP SEQUENCE OF 24-148.
RX TISSUE=Milk;
CC MEDLINE=89065101; PubMed=3197838;
RA Maes P., Damart D., Rommens C., Montreuil J., Spik G., Tartar A.;
RT "The complete amino acid sequence of bovine milk angiogenin.";
RL FEBS Lett. 241:41-45(1988).
RN [3]
RP SEQUENCE OF 24-148.
RX TISSUE=Plasma;
CC MEDLINE=89375344; PubMed=2775757;
RA Bond M.D., Strydom D.J.;
RT "Amino acid sequence of bovine angiogenin.";
RL Biochemistry 28:6110-6113(1989).
RN [4]
RP CHARACTERIZATION, AND SEQUENCE OF 25-55.
RX TISSUE=Plasma;
CC MEDLINE=89118214; PubMed=3064806;
RA Bond M.D., Vallée B.L.;
RT "Isolation of bovine angiogenin using a placental ribonuclease
RT inhibitor binding assay.";
RL Biochemistry 27:6282-6287(1988).
RN [5]
RP X-RAY CRYSTALLOGRAPHY (1.5 ANGSTROMS).
RX MEDLINE=95224057; PubMed=7708754;
RA Acharya K.R., Shapiro R., Riordan J.F., Vallée B.L.;
RT "Crystal structure of bovine angiogenin at 1.5-A resolution.";
RL Proc. Natl. Acad. Sci. U.S.A. 92:2949-2953(1995).
RN [6]
RP STRUCTURE BY NMR.
RX MEDLINE=96280645; PubMed=8688423;
RA Lequin O., Albaret C., Bontems F., Spik G., Lallemand J.-Y.;

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RT "Solution structure of bovine angiogenin by 1H nuclear magnetic
RL resonance spectroscopy."
RL Biochemistry 35:8870-8880(1996).
CC -!- FUNCTION: May function as a tRNA-specific ribonuclease that binds
CC to actin on the surface of endothelial cells; once bound,
CC angiogenin is endocytosed and translocated to the nucleus, thereby
CC promoting the endothelial invasiveness necessary for blood vessel
CC formation. Angiogenin induces vascularization of normal and
CC malignant tissues. Abolishes protein synthesis by specifically
CC hydrolyzing cellular tRNAs. Binds tightly to placental
CC ribonuclease inhibitor and has very low ribonuclease activity.
CC -!- SUBCELLULAR LOCATION: Secreted.
CC -!- TISSUE SPECIFICITY: Serum and milk.
CC -!- SIMILARITY: Belongs to the pancreatic ribonuclease family.
CC -----
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CC or send an email to license@isb-sib.ch).
CC -----
DR EMBL; AF135124; AAC47631.1; -.
DR PDB; 1AGI; 03-APR-96.
DR PDB; 1GIO; 07-DEC-96.
DR InterPro; IPR001427; RNaseA.
DR Pfam; PF00074; RNaseA; 1.
DR PRINTS; PR00794; RIBONUCLEASE.
DR ProDom; PD000535; RNaseA; 1.
DR SMART; SMO0092; RNase_Pc; 1.
DR ProSITE; PS00127; RNASE_PANCREATIC; 1.
DR Hydroxylase; Nuclease; Endonuclease; Angiogenesis;
KW Protein synthesis inhibitor; Signal; 3D-structure.
FT SIGNAL 1 23 ANGIOENIN-1.
FT CHAIN 24 148
FT ACT_SITE 37 37
FT ACT_SITE 64 64
FT ACT_SITE 138 138
FT DISULFID 50 105
FT DISULFID 63 116
FT DISULFID 81 131
SQ SEQUENCE 148 AA; 16969 MW; B7999124CB523DD CRC64;

Query Match 22.1%; Score 128; DB 1; Length 148;
Best Local Similarity 34.0%; Pred. No. 7.8e-07;
Matches 33; Conservative 14; Mismatches 32; Indels 18; Gaps 5;

QY 16 DVDNNIMSTNLF--HCKDKNTFIYSRPEPVKAICKGIASKN-----VLTSEFYL 65
Db | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
47 DEYCFNMKNRRLTRPKDNTFIHGKNKDKAICE---DRNGQPYRGDLRIKSEFQI 102
QY 66 SDC--NVTSR-PCKYKLKSTNTFCVTCENQAPVHF 98
Db | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
103 TICKHKGSSRPPCRIGATEDSRVIVVGCENGLPVHF 139

RESULT 10
RNP_MYOCO
ID RNP_MYOCO STANDARD; PRT; 128 AA.
AC P00676;
DT 21-JUL-1986 (Rel. 01, Created)
DT 21-JUL-1986 (Rel. 01, Last sequence update)
DT 28-FEB-2003 (Rel. 41, Last annotation update)
DE Ribonuclease pancreatic (EC 3.1.27.5) (RNase 1) (RNase A).
GN RNASE1 OR RNS1.
OS Myocastor coypus (Coypu) (Nutria).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Hystriognathi; Myocastoridae;
OC Myocastor.
OX NCBI_TaxID=10157;
RN [1]
RP SEQUENCE.

```

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RC TISSUE=Pancreas;
RX MEDLINE=77065676; PubMed=999896;
RA van den Berg A., van den Hende-Timmer L., Beintema J.J.;
RT "Isolation, properties and primary structure of coypu and chinchilla
RT pancreatic ribonuclease."
RL Biochim. Biophys. Acta 453:400-409(1976).
CC -!- CATALYTIC ACTIVITY: Endonucleolytic cleavage to nucleoside 3'-
CC phosphates and 3'-phosphooligonucleotides ending in C-P or U-P
CC with 2',3'-cyclic phosphate intermediates.
CC -!- SUBCELLULAR LOCATION: Secreted.
CC -!- TISSUE SPECIFICITY: Pancreas.
CC -!- SIMILARITY: Belongs to the pancreatic ribonuclease family.
DR PIR; A00822; NRCU.
DR HSSP; P00656; 1SRN.
DR InterPro; IPR001427; RNaseA.
DR Pfam; PF00074; RNaseA; 1.
DR PRINTS; PR00794; RIBONUCLEASE.
DR ProDom; PD000535; RNaseA; 1.
DR SMART; SMO0092; RNase_Pc; 1.
DR ProSITE; PS00127; RNASE_PANCREATIC; 1.
KW Hydroxylase; Nuclease; Endonuclease; Glycoprotein.
FT DISULFID 26 84
FT DISULFID 40 95
FT DISULFID 58 110
FT DISULFID 65 72
FT ACT_SITE 12 12
FT ACT_SITE 41 41
FT ACT_SITE 119 119
FT CARBOHYD 34 34
SQ SEQUENCE 128 AA; 14267 MW; 4EB924B52B445832 CRC64;

Query Match 21.8%; Score 126; DB 1; Length 128;
Best Local Similarity 29.3%; Pred. No. 1.1e-06;
Matches 35; Conservative 18; Mismatches 36; Indels 28; Gaps 7;

QY 6 FQKHL-----TNRDVCNNIM-STNLF--HCKDKNTFIYSRPEPVKAICKGIASKN 57
Db | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
8 FERQHMDSRGSPSTNENYCNEMKSRNTQGRCKPNTFVHEPLADYQAVC-----PQKNV 63
QY 58 L-----TTSEFYLSDCNVTSRP-----CKYKLKSTNTFCVTCENQ--APVHF 98
Db | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
64 LCKNGQTCYQSNMNHITDCRVTSNSDYPNCSYRTSQEKSIVVACEGPPYVPHF 120

RESULT 11
RNP_BALAC
ID RNP_BALAC STANDARD; PRT; 124 AA.
AC P00673;
DT 21-JUL-1986 (Rel. 01, Created)
DT 21-JUL-1986 (Rel. 01, Last sequence update)
DT 10-OCT-2003 (Rel. 42, Last annotation update)
DE Ribonuclease pancreatic (EC 3.1.27.5) (RNase 1) (RNase A).
GN RNASE1 OR RNS1.
OS Balaenoptera acutorostrata (Minke whale) (Lesser rorqual).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Cetacea; Mysticeti;
OC Balaenopteridae; Balaenoptera.
OX NCBI_TaxID=9767;
RN [1]
RP SEQUENCE.
RX MEDLINE=76277855; PubMed=962870;
RA Emmens M., Welling G.W., Beintema J.J.;
RT "The amino acid sequence of pike-whale (lesser-rorqual) pancreatic
RT ribonuclease."
RL Biochem. J. 157:317-323(1976).
CC -!- CATALYTIC ACTIVITY: Endonucleolytic cleavage to nucleoside 3'-
CC phosphates and 3'-phosphooligonucleotides ending in C-P or U-P
CC with 2',3'-cyclic phosphate intermediates.
CC -!- SUBCELLULAR LOCATION: Secreted.
CC -!- TISSUE SPECIFICITY: Pancreas.
CC -!- SIMILARITY: Belongs to the pancreatic ribonuclease family.
DR PIR; A00818; NRWHK.
DR HSSP; P00656; 1SRN.

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FT CARBOHYD 34 34 N-LINKED (GLCNAC. . .).
SQ SEQUENCE 128 AA; 14244 MW; 2DB58093A9D3C936 CRC64;

Query Match 20.8%; Score 120; DB 1; Length 128;
Best Local Similarity 29.9%; Pred. No. 4.8e-06;
Matches 35; Conservative 18; Mismatches 36; Indels 28; Gaps 7;

QY 6 FOKKHL-----TNTDRVDCCNM--STNLF--HCKDKNTFTYSRPEPKAICKGIIASKNV 57
|:::| |:::| |:::| |:::| |:::| |:::| |:::| |:::| |:::| |:::| |:::| |:::|
Db 8 FQHQHIDSSGSPSTPNYCNAMKSRNWTQERCKPNTFVHEPLADVQAVC-----FQKNV 63
|:::| |:::| |:::| |:::| |:::| |:::| |:::| |:::| |:::| |:::| |:::| |:::|

QY 58 -----LTTSEFYLSDCNVTSR-----PCKYKLKKSNTFCVTCENQ--APVHF 98
|:::| |:::| |:::| |:::| |:::| |:::| |:::| |:::| |:::| |:::| |:::| |:::|
Db 64 PCKNGSQSYESTSNMHIITCRLTSSKFPDCLRTYSQBEKSIITVACENGPVYPVHF 120
|:::| |:::| |:::| |:::| |:::| |:::| |:::| |:::| |:::| |:::| |:::| |:::|

RESULT 14
ANGI_MOUSE
ID ANGI_MOUSE STANDARD; PRT; 145 AA.
AC P21570;
DT 01-MAY-1991 (Rel. 18, Created)
DT 01-MAY-1991 (Rel. 18, Last sequence update)
DE 15-MAR-2004 (Rel. 43, Last annotation update)
DE Angiogenin precursor (EC 3.1.27.-) (Ribonuclease 5) (Rnase 5).
GN ANG.
OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX NCBI_TaxID=10090;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=91025023; PubMed=2222459;
RA Bond M.D., Vallee B.L.;
RA "Isolation and sequencing of mouse angiogenin DNA.";
RL Biochem. Biophys. Res. Commun. 171:988-995(1990).
RN [2]
RP SEQUENCE FROM N.A.
RC STRAIN=FVB/N; TISSUE=Liver;
RX MEDLINE=22388257; PubMed=12477932;
RA Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,
RA Klausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,
RA Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
RA Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,
RA Diachenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
RA Stapleton M., Soares M.B., Bonaldi M.F., Casavant T.L., Scheetz T.E.,
RA Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,
RA Raha S.A., Loquellano N.A., Peters G.J., Abramson R.D., Mullany S.J.,
RA Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
RA Villalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,
RA Fahey J., Helton E., Kettaman M., Madan A., Rodrigues S., Sanchez A.,
RA Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,
RA Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,
RA Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M.,
RA Butterfield Y.S.N., Krzywinski M.I., Skalska U., Smalish D.E.,
RA Schnerch A., Schein J.E., Jones S.J.M., Marra M.A.;
RT "Generation and initial analysis of more than 15,000 full-length
human and mouse cDNA sequences.";
RL Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).
RN [3]
RP PARTIAL SEQUENCE.
RC TISSUE=Serum;
RX MEDLINE=93192291; PubMed=8448182;
RA Bond M.D., Strydom D.J., Vallee B.L.;
RT "Characterization and sequencing of rabbit, pig and mouse
angiogenins: discernment of functionally important residues and
regions.";
RL Biochim. Biophys. Acta 1162:177-186(1993).
CC -!- FUNCTION: May function as a tRNA-specific ribonuclease that binds
to actin on the surface of endothelial cells; once bound,
angiogenin is endocytosed and translocated to the nucleus, thereby
promoting the endothelial invasiveness necessary for blood vessel
formation. Angiogenin induces vascularization of normal and
```


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OM protein - protein search, using sw model

Run on: May 7, 2004, 21:38:36 ; Search time 9.43686 Seconds
(without alignments)
1060.090 Million cell updates/sec

Title: US-09-961-400-2
Perfect score: 578
Sequence: 1 QDWLTFQKKHLNTRDVCN.....TFCVTCENQAPVHFVGVC 104

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 283366 seqs, 96191526 residues
Total number of hits satisfying chosen parameters: 283366

Minimum DB seq length: 0
Maximum DB seq length: 2000000000
Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : PIR 78:*
1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	553	95.7	104	2 A39035	ribonuclease-relat
2	289	50.0	111	2 A27121	ribonuclease-relat
3	285.5	49.4	111	1 JX0120	ribonuclease-relat
4	269.5	46.6	111	2 JX0085	ribonuclease-relat
5	149	25.8	119	2 S41111	pancreatic ribonuc
6	131	22.7	124	1 NRUI	pancreatic ribonuc
7	128	22.1	125	1 A32474	pancreatic ribonuc
8	126	21.8	128	1 NRCU	pancreatic ribonuc
9	125	21.6	124	1 NRWHK	pancreatic ribonuc
10	120	20.8	128	1 NRKS	pancreatic ribonuc
11	119.5	20.7	145	1 A35932	angiogenin precurs
12	119	20.6	128	1 NRCGPB	pancreatic ribonuc
13	117	20.2	124	1 NRCB	pancreatic ribonuc
14	116	20.1	125	1 B43825	angiogenin - rabbi
15	116	20.1	128	1 NRYV	pancreatic ribonuc
16	114	19.7	124	1 NRHP	pancreatic ribonuc
17	113	19.6	147	1 NRHUG	angiogenin precurs
18	112	19.4	124	1 NRBOB	pancreatic ribonuc
19	112	19.4	124	1 NRPB	pancreatic ribonuc
20	112	19.4	150	1 NRBO	pancreatic ribonuc
21	111.5	19.3	147	2 I52489	ribonuclease 4 (EC
22	111	19.2	124	2 S08549	ribonuclease - dom
23	111	19.2	128	1 NRHO	pancreatic ribonuc
24	111	19.2	128	1 NRPQ	pancreatic ribonuc
25	111	19.2	167	2 S20066	pancreatic-type ri
26	110.5	19.1	123	1 A43825	angiogenin - pig
27	110.5	19.1	155	2 JC6159	eosinophil-associa
28	109	18.9	124	1 NRSH	pancreatic ribonuc
29	109	18.9	124	1 NRPRH	pancreatic ribonuc

30	109	18.9	124	1 NRQPA	pancreatic ribonuc
31	109	18.9	124	2 S07141	pancreatic ribonuc
32	108	18.7	124	1 NRWB	pancreatic ribonuc
33	108	18.7	124	1 NRGN	pancreatic ribonuc
34	107	18.5	124	1 NRGF	pancreatic ribonuc
35	106	18.3	156	2 JC6160	eosinophil-associa
36	105	18.2	124	1 NRDEO	pancreatic ribonuc
37	105	18.2	124	1 NRCM	pancreatic ribonuc
38	105	18.2	124	1 NRCMM	pancreatic ribonuc
39	105	18.2	124	1 NRCMB	pancreatic ribonuc
40	105	18.2	128	1 NRCW2	pancreatic ribonuc
41	104	18.0	124	1 NRHY	pancreatic ribonuc
42	103	17.8	124	1 NRDER	pancreatic ribonuc
43	103	17.8	124	1 NRDEN	pancreatic ribonuc
44	103	17.8	124	1 NREKN	pancreatic ribonuc
45	102	17.6	124	1 NRDEF	pancreatic ribonuc

ALIGNMENTS

RESULT 1
A39035
ribonuclease-related anti-tumor protein - northern leopard frog (fragment)
C;Species: Rana pipiens (northern leopard frog)
C;Date: 31-Jul-1991 #sequence_revision 31-Jul-1991 #text_change 30-Jun-1993
C;Accession: A39035
R;Ardelt, W.; Mikulski, S.M.; Shogen, K.
J. Biol. Chem. 266, 245-251, 1991
A;Title: Amino acid sequence of an anti-tumor protein from Rana pipiens oocytes and earl
A;Reference number: A39035; PMID:91093131; PMID:1985896
A;Accession: A39035
A;Status: preliminary
A;Molecule type: protein
A;Residues: 1-104 <ARD>
C;Superfamily: pancreatic ribonuclease

Query Match 95.7%; Score 553; DB 2; Length 104;
Best Local Similarity 95.2%; Pred. No. 1.1e-48;
Matches 99; Conservative 3; Mismatches 2; Indels 0; Gaps 0;
QY 1 QDWLTFQKKHLNTRDVCNIMSTNLFHCKDKNTFIYSRPEPKVKAICGIIASKNVLTT 60
DB 1 EDWLTFFQKHITNTRDVCNIMSTNLFHCKDKNTFIYSRPEPKVKAICGIIASKNVLTT 60
QY 61 SEFYLSDCNVTSPCKYKLLKSTNTFCVTCENQAPVHFVGVC 104
DB 61 SEFYLSDCNVTSPCKYKLLKSTNTFCVTCENQAPVHFVGVC 104

RESULT 2
A27121
ribonuclease-related sialic acid-binding lectin - bullfrog
C;Species: Rana catesbeiana (bullfrog)
C;Date: 19-Nov-1988 #sequence_revision 19-Nov-1988 #text_change 30-Jun-1993
C;Accession: A27121
R;Titani, K.; Takio, K.; Kuwada, M.; Nitta, K.; Sakakibara, F.; Kawachi, H.; Takayanagi
Biochemistry 26, 2169-2194, 1987
A;Title: Amino acid sequence of sialic acid-binding lectin from frog (Rana catesbeiana)
A;Reference number: A27121; PMID:87299649; PMID:3304421
A;Accession: A27121
A;Molecule type: protein
A;Residues: 1-111 <TIT>
C;Superfamily: pancreatic ribonuclease
C;Keywords: lectin
Query Match 50.0%; Score 289; DB 2; Length 111;
Best Local Similarity 48.6%; Pred. No. 4.2e-22;
Matches 54; Conservative 17; Mismatches 32; Indels 8; Gaps 3;
QY 1 QDWLTFQKKHLNTRDVCNIMSTNLFHCKDKNTFIYSRPEPKVKAICGIIASKN 56
DB 1 ENWATFQQRHIINTPIINCNTIMDNNIYVGGCKRVNTFIISATTVAICTGVI-NMN 59

```

C;Species: Iguana iguana (common iguana)
C;Date: 19-Mar-1997 #sequence_revision 19-Mar-1997 #text_change 21-Aug-1998
C;Accession: S41111
R;Zhao, W.; Beintema, J.J.; Hofsteenge, J.
Eur. J. Biochem. 219, 641-646, 1994
A;Title: the amino acid sequence of iguana (Iguana iguana) pancreatic ribonuclease.
A;Reference number: S41111; MUID:94139745; PMID:8307028
A;Accession: S41111
A;Status: preliminary
A;Molecule type: protein
A;Residues: 1-119 <ZHA>
C;Superfamily: pancreatic ribonuclease

Query Match          25.8%; Score 149; DB 2; Length 119;
Best Local Similarity 30.7%; Pred. No. 5.5e-08;
Matches 35; Conservative 19; Mismatches 44; Indels 16; Gaps 5;

QY 1 QDWLTQKQKHL-----TNRDWDGNMIM---STNLFHCKDKNTFIYSRPEPVKAIC--K 49
DB 1 QDWSSFQNKHIDYPETSAENPAYCDLMMORENLNFTKCKTNTFVHASPSEIQVCGSG 60

QY 50 GIATSKNVLTTSB-FVLSDC-----NVTGRPCYKYLKKSNTFCVTCENQAPVHF 98
DB 61 GTHYEDNLYDSNESEFLDTCKNVGGTAPSSCKYNGTPTGKIRIACENNQPVHF 114

RESULT 6
NRUI
pancreatic ribonuclease (EC 3.1.1.27.5) - cuis
N;Alternate names: RNase 1; RNase A
C;Species: Galea musteloides (cuis)
C;Date: 03-Aug-1984 #sequence_revision 03-Aug-1984 #text_change 04-Oct-1996
C;Accession: A00827
R;Beintema, J.J.; Neuteboom, B.
J. Mol. Evol. 19, 145-152, 1983
A;Title: Origin of the duplicated ribonuclease gene in guinea-pig: comparison of the
A;Reference number: A92957; MUID:87036770; PMID:6571219
A;Accession: A00827
A;Molecule type: protein
A;Residues: 1-124 <BEI>
A;Note: about one-third of the molecules lacked Ala-1
C;Comment: The cuis is a rodent belonging to the same subfamily as the guinea pig.
C;Superfamily: pancreatic ribonuclease
C;Keywords: glycoprotein; hydrolase; nucleic acid digestion; pancreas
F;12,41,119/Active site: His, Lys, His #status predicted
F;26-84,40-95,58-110,65-72/Disulfide bonds: #status predicted
F;94/Binding site: carbohydrate (Asn) (covalent) #status absent

Query Match          22.7%; Score 131; DB 1; Length 124;
Best Local Similarity 30.6%; Pred. No. 3.7e-06;
Matches 37; Conservative 18; Mismatches 34; Indels 32; Gaps 7;

QY 4 LTFQKKHL-----TNRDWDGNMIM---STNLFHCKDKNTFIYSRPEPVKAICKGIIA 53
DB 6 MKFQKQHMDSGHPDTN--YCNEMVRRSMTQGRCKPVNTFVHPELVQAVC----S 59

QY 54 SKNV-----LTTSEFYLSDCNVTSRP-----CKYLLKKSNTTFCVTCEN--QAPVH 97
DB 60 QKNVPCKNGQTCYQSHSSMRITDCRVTSSSKYPNCYSYRMTQAQKSIIVACEGFPSPVH 119
QY 98 F 98
DB 120 F 120

RESULT 7
A32474
angiogenin [validated] - bovine
N;Alternate names: angiogenesis factor
N;Contains: ribonuclease (EC 3.1.27.-)
C;Species: Bos primigenius taurus (cattle)
C;Date: 25-Sep-1989 #sequence_revision 25-Sep-1989 #text_change 15-Sep-2000
C;Accession: A32474; S02001; A30044; S48212

```

A;Residues: 1-128 <VAN>
C:Superfamily: pancreatic ribonuclease
C:Keywords: glycoprotein; hydrolase; nucleic acid digestion; pancreas
F:12,41,119/Active site: His, Lys, His #status predicted
F:26-84,40-95,58-110,65-72/Dисульфide bonds: #status predicted
F:34/Binding site: carbohydrate (Asn) #status experimental

Query Match 21.8%; Score 126; DB 1; Length 128;
Best Local Similarity 29.6%; Pred. No. 1.2e-05;
Matches 35; Conservative 18; Mismatches 36; Indels 28; Gaps 7;

QY 6 FOKKHL-----TNRDVEDCNIM-STNLF--HCKDKNTFIYSRPEPYKAICKGIASKNV 57
Db :|||:|||:|||:|||:|||:|||:|||:|||:
8 FERQMDSRGSPSTPNFYCNEMMKSRNMTOGRCKPVNTFVHEPLADVAQC---FOKNV 63
Db :|||:|||:|||:|||:|||:|||:|||:|||:
QY 58 L-----TTSEFYLSDCNVTSRP----CKYKLKKSTNTFCVTCENQ--APVHF 98
Db :|||:|||:|||:|||:|||:|||:|||:|||:
64 LCKNGQTNCYQSNSNMHTDCRVTSNDYPNCVSRTSQEEKSVIVACEGNPPVPVHF 120
Db :|||:|||:|||:|||:|||:|||:|||:|||:

RESULT 9
NRWK
pancreatic ribonuclease (EC 3.1.27.5) - minke whale
N:Alternate names: RNase 1; RNase A
C:Species: Balaenoptera acutorostrata (minke whale, lesser rorqual)
C:Date: 24-Apr-1984 #sequence revision 24-Apr-1984 #text_change 03-Jun-1994
C:Accession: A00818
R:Emmens, M.; Wellling, G.W.; Beintema, J.J.
Biochem. J. 157, 317-323, 1976
A:Title: The amino acid sequence of pike whale (lesser rorqual) pancreatic ribonuclease
A:Reference number: A00818; MUID:76277855; PMID:962870
A:Accession: A00818
A:Molecule type: protein
A:Residues: 1-124 <EMW>
C:Superfamily: pancreatic ribonuclease
C:Keywords: glycoprotein; hydrolase; nucleic acid digestion; pancreas
F:12,41,119/Active site: His, Lys, His #status predicted
F:26-84,40-95,58-110,65-72/Dисульфide bonds: #status predicted
F:34/Binding site: carbohydrate (Asn) #status experimental

Query Match 21.6%; Score 125; DB 1; Length 124;
Best Local Similarity 28.6%; Pred. No. 1.5e-05;
Matches 34; Conservative 15; Mismatches 42; Indels 28; Gaps 6;

QY 4 LTFOKKHLINTRDVD-----CNNIMTNLF--HCKDKNTFIYSRPEPYKAICKGIASK 55
Db :|||:|||:|||:|||:|||:|||:|||:|||:
6 MKEFQRQMDSGNSFGNNPNYCMMRRKMTOGRCKPVNTFVHESLEDRVAVC----SQK 61
QY 56 NVL-----TTSEFYLSDCNVTSRP----CKYKLKKSTNTFCVTCENQ--APVHF 98
Db :|||:|||:|||:|||:|||:|||:|||:|||:
62 NVLCKNGRTNCVESNMTMHTDCRQTSGSKYPNCAYKTSQEKHIIVACEGNPPVPVHF 120
Db :|||:|||:|||:|||:|||:|||:|||:|||:

RESULT 10
NRKS
pancreatic ribonuclease (EC 3.1.27.5) - casiragua
C:Species: Proechimys guairae (casiragua)
C:Date: 17-Mar-1987 #sequence_revision 17-Mar-1987 #text_change 30-Sep-1993
C:Accession: A00821
R:Beintema, J.J.; Knol, G.; Martena, B.
Biochim. Biophys. Acta 705, 102-110, 1982
A:Title: The primary structures of pancreatic ribonucleases from African porcupine and
A:Reference number: A90644; MUID:83000399; PMID:7115727
A:Accession: A00821
A:Molecule type: protein
A:Residues: 1-128 <BEI>
A>Note: residues 67-78 were positioned primarily by homology with other ribonucleases
C:Superfamily: pancreatic ribonuclease
C:Keywords: glycoprotein; hydrolase; nucleic acid digestion; pancreas
F:12,41,119/Active site: His, Lys, His #status predicted
F:26-84,40-95,58-110,65-72/Dисульфide bonds: #status predicted
F:34/Binding site: carbohydrate (Asn) #status experimental

Query Match 20.8%; Score 120; DB 1; Length 128;
Best Local Similarity 29.3%; Pred. No. 5e-05;
Matches 35; Conservative 18; Mismatches 36; Indels 28; Gaps 7;

QY 6 FQKKHL-----TNTRDVDCNNIM--STNLF--HCKDKNTFYSPRPVKAICKGIASKNV 57
DB 8 FQKHIDSSGSPSTNYCNAMKSRNMTQERCKPNTFVHEPLADVQAVC-----FQKNV 63

QY 58 -----LTTSEFYLSDCNVTSR-----PCYKLLKSTNTFCVTCENQ--APVHF 98
DB 64 PCKNGQSCNVESTNNHITDCLRTSNKFPDCLYRTSQBEKSIIVACEGPNYPVVFH 120

RESULT 11
A35932
angiogenin precursor - mouse
N;Alternate names: angiogenesis factor
N;Contains: ribonuclease (EC 3.1.27.-)
C;Species: Mus musculus (house mouse)
C;Date: 09-Nov-1990 #sequence_revision 09-Nov-1990 #text_change 18-Jun-1999
C;Accession: A35932
R;Bond, M.D.; Vallee, B.L.
Biochem. Biophys. Res. Commun. 171, 988-995, 1990
A;Title: Isolation and sequencing of mouse angiogenin DNA.
A;Reference number: A35932; MUID: 91025023; PMID: 2222458
A;Accession: A35932
A;Status: not compared with conceptual translation
A;Molecule type: DNA
A;Residues: 1-145 <BON>
A;Cross-references: GB:U22516; NID:g726325; PID:AAA91366.1; PID:g726326
C;Genetics: #status absent
A;Introns: #status absent
C;Function:
A;Description: hydrolyzes tRNA; induces vascularization of normal and malignant tissues
C;Superfamily: pancreatic ribonuclease
C;Keywords: angiogenesis; hydrolase; nucleic acid degradation; pyroglutamic acid
F;1-24/Domain: signal sequence #status predicted <SIG>
F;25-145/Product: angiogenin #status predicted <MAT>
F;25/Modified site: pyrrolidone carboxylic acid (Gln) (in mature form) #status predicted
F;37,137/Active site: His, Lys, His #status predicted
F;50-104,63-115,81-130/Disulfide bonds: #status predicted

Query Match 20.7%; Score 119.5; DB 1; Length 145;
Best Local Similarity 30.8%; Pred. No. 6.3e-05;
Matches 33; Conservative 12; Mismatches 45; Indels 17; Gaps 5;

QY 9 KHLTNTRDVD-----CNNIMSTNLF--HCKDKNTFYSPRPVKAIC--KGIIASKN 56
DB 32 KFLTQHHDAXPKGRDDRYCERMKRRSLTSPCKDVNTFIHGKSNKAIKANGSPYREN 91

QY 57 V-LTTSEFYLSDCNVT-----RPPCKYKLLKSTNTFCVTCENQAPVHF 98
DB 92 LRMSKSPFQVTTCKTHGTGSPRPPCQYRASAGFRHVIACENGLFVHF 138

RESULT 12
NRCEB
pancreatic ribonuclease (EC 3.1.27.5) B - guinea pig (tentative sequence)
N;Alternate names: RNase IB
C;Species: Cavia porcellus (guinea pig)
C;Date: 24-Apr-1984 #sequence_revision 24-Apr-1984 #text_change 31-Mar-2000
C;Accession: A00826
R;van den Berg, A.; van den Hende-Timmer, L.; Hofsteenge, J.; Gastra, W.; Beintema, J.J.
Eur. J. Biochem. 75, 91-100, 1977
A;Title: Guinea pig pancreatic ribonucleases. Isolation, properties, primary structure
A;Reference number: A91247; MUID: 77185023; PMID: 862624
A;Accession: A00826
A;Molecule type: protein
A;Residues: 1-128 <VAN>
A;Note: 64-Pro was also found
C;Superfamily: pancreatic ribonuclease
C;Keywords: glycoprotein; hydrolase; nucleic acid digestion; pancreas
F;12,41,119/Active site: His, Lys, His #status predicted

F;21,34/Binding site: carbohydrate (Asn) (covalent) #status experimental
F;26-84,40-95,58-110,65-72/Disulfide bonds: #status predicted

Query Match 20.6%; Score 119; DB 1; Length 128;
Best Local Similarity 28.3%; Pred. No. 6.2e-05;
Matches 34; Conservative 21; Mismatches 35; Indels 30; Gaps 7;

QY 4 LTFQKKHL-----TNTRDVDCNNIM--STNLFHCKDKNTFYSPRPVKAICKGIAS 54
DB 6 MKFQROHMDPEGSPSSNY-CNVMMIRRMNTQGRCKPNTFVHESLADVQAVC-----FQ 60

QY 55 KNYL-----LTTSEFYLSDCNVTSRP-----CKYKLLKSTNTFCVTCENQ--APVHF 98
DB 61 KNYLCKNGQTCNVCYSYRMRITDCRVTSKSPKPCNSYRMSQAQKSIIVACEGPNYPVVFH 120

RESULT 13
NRCEB
pancreatic ribonuclease (EC 3.1.27.5) - Chinchilla brevicaudata (tentative sequence)
N;Alternate names: RNase 1; RNase A
C;Species: Chinchilla brevicaudata, Chinchilla lanigera brevicaudata
C;Date: 24-Apr-1984 #sequence_revision 30-Sep-1988 #text_change 31-Mar-2000
C;Accession: A00820
R;van den Berg, A.; van den Hende-Timmer, L.; Beintema, J.J.
Biochim. Biophys. Acta 453, 400-409, 1976
A;Title: Isolation, properties and primary structure of coypu and chinchilla pancreatic
A;Reference number: A90612; MUID: 77065676; PMID: 999896
A;Accession: A00820
A;Molecule type: protein
A;Residues: 1-124 <VAN>
A;Note: a second component of chinchilla ribonuclease has 32-Asp
C;Superfamily: pancreatic ribonuclease
C;Keywords: glycoprotein; hydrolase; nucleic acid digestion; pancreas
F;12,41,119/Active site: His, Lys, His #status predicted
F;26-84,40-95,58-110,65-72/Disulfide bonds: #status predicted
F;34/Binding site: carbohydrate (Asn) (covalent) #status experimental

Query Match 20.2%; Score 117; DB 1; Length 124;
Best Local Similarity 26.9%; Pred. No. 9.6e-05;
Matches 32; Conservative 19; Mismatches 40; Indels 28; Gaps 6;

QY 4 LTFQKKHL-----TNTRDVDCNNIM--STNLFHCKDKNTFYSPRPVKAICKGIASK 55
DB 6 MKFQROHMDSSGSPSTNANYCNEMKGRNMTQGYCKPNTFVHEPLADVQAVC----FQK 61

QY 56 NV-----LTTSEFYLSDCNVTSRP-----CKYKLLKSTNTFCVTCENQ--APVHF 98
DB 62 NVPCKNGQSCNVCYSNMGHITDCLRTSNKSPKPCNSYRMSKGIIVACEGPNYPVVFH 120

RESULT 14
B43825
angiogenin - rabbit
C;Species: Oryctolagus cuniculus (domestic rabbit)
C;Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 10-Sep-1999
C;Accession: S29833; B43825
R;Bond, M.D.; Strydom, D.J.; Vallee, B.L.
Biochim. Biophys. Acta 1162, 177-186, 1993
A;Title: Characterization and sequencing of rabbit, pig and mouse angiogenins: discermin
A;Reference number: S29833; MUID: 93192291; PMID: 8448182
A;Accession: S29833
A;Status: preliminary
A;Molecule type: protein
A;Residues: 1-125 <BON>
A;Note: submitted to the Protein Sequence Database, December 1992
C;Superfamily: pancreatic ribonuclease
C;Keywords: pyroglutamic acid
F;1/Modified site: pyrrolidone carboxylic acid (Gln) #status experimental

Query Match 20.1%; Score 116; DB 1; Length 125;
Best Local Similarity 31.2%; Pred. No. 0.00012;
Matches 24; Conservative 13; Mismatches 32; Indels 8; Gaps 3;

GenCore version 5.1.6
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OM protein - protein search, using sw model

Run on: May 7, 2004, 21:25:55 ; Search time 44.363 Seconds
(without alignments)
662.376 Million cell updates/sec

Title: US-09-961-400-4
Perfect score: 579
Sequence: 1 QDLTFQKHLNTRDVCN.....TFCVTCENQAPVHFVGVGHC 104

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 1586107 seqs, 282547505 residues

Total number of hits satisfying chosen parameters: 1586107

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : A Geneseq 26Jan04: *
1: Geneseqp1980s: *
2: Geneseqp1990s: *
3: Geneseqp2000s: *
4: Geneseqp2001s: *
5: Geneseqp2002s: *
6: Geneseqp2003as: *
7: Geneseqp2003bs: *
8: Geneseqp2004s: *

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match %	Length	DB ID	Description
1	571	98.6	104	2	AAY28866 Recombina
2	571	98.6	105	2	AAY28869 Recombina
3	569	98.3	104	2	AAY28865 Rana pipi
4	569	98.3	105	2	AAY28867 Recombina
5	569	98.3	127	2	AAY28879 Rana pipi
6	564	97.4	104	2	AAY28870 Recombina
7	564	97.4	105	2	AAY28871 Recombina
8	549	94.8	104	2	AAY28871 Recombina
9	547	94.5	104	2	AAY28871 Recombina
10	547	94.5	104	2	AAY28871 Recombina
11	547	94.5	104	2	AAY28871 Recombina
12	547	94.5	379	2	AAY28871 Recombina
13	546	94.3	104	2	AAY28871 Recombina
14	544	94.0	104	2	AAY28871 Recombina
15	544	94.0	104	2	AAY28871 Recombina
16	544	94.0	104	2	AAY28871 Recombina
17	544	94.0	104	2	AAY28871 Recombina
18	544	94.0	104	2	AAY28871 Recombina
19	544	94.0	104	2	AAY28871 Recombina
20	544	94.0	104	2	AAY28871 Recombina
21	544	94.0	104	2	AAY28871 Recombina
22	544	94.0	104	2	AAY28871 Recombina
23	544	94.0	105	2	AAY28871 Recombina
24	544	94.0	105	2	AAY28871 Recombina
25	544	94.0	355	2	AAY28871 Recombina

26	544	94.0	358	2	AAW35130	R. pipien
27	542	93.6	106	2	AAW35122	R. pipien
28	542	93.6	107	2	AAW35117	R. pipien
29	542	93.6	112	2	AAW35118	R. pipien
30	542	93.6	251	2	AAW35134	R. pipien
31	542	93.6	254	2	AAW35135	R. pipien
32	542	93.6	355	2	AAW35133	R. pipien
33	542	93.6	355	2	AAW35129	R. pipien
34	542	93.6	366	2	AAW35132	R. pipien
35	539	93.1	104	2	AAW18224	R. pipien
36	537	92.7	105	2	AAW35115	R. pipien
37	537	92.7	105	2	AAW35116	R. pipien
38	533	92.1	358	2	AAW35127	R. pipien
39	533	92.1	365	2	AAW35131	R. pipien
40	518	89.5	107	2	AAW35120	R. pipien
41	481	83.1	360	2	AAW35128	R. pipien
42	474.5	82.0	111	2	AAW35121	R. pipien
43	436	75.3	83	2	AAW35119	R. pipien
44	436	75.3	83	2	AAW88234	Rana pipi
45	283	48.9	111	2	AAW33321	Frog lect

ALIGNMENTS

RESULT 1
AAY28866
ID AAY28866 standard; protein; 104 AA.
XX AC AAY28866;
XX DT 25-JAN-2000 (first entry)
XX DE Recombinant RapLRI Met23Leu amino acid sequence.
XX KW Recombinant Rana pipiens ribonuclease; RapLRI Met23Leu; covalently bound; L12 antibody; ligand binding moiety; CD22; cancerous B cell; RNase;
KW Kaposi's sarcoma; human chorionic gonadotropin; hCG; signal peptide;
KW recombinant ribonuclease; cytotoxic fusion protein; cancer; frog;
KW autoimmune disease.
XX OS Rana pipiens.
OS Synthetic.
XX FH Key Location/Qualifiers
FT Misc-difference 23 /note= "Wild type Met replaced with Leu"
XX WO9950398-A2.
XX PD 07-OCT-1999.
XX PF 26-MAR-1999; 99WO-US0006641.
XX PR 27-MAR-1998; 98US-0079751P.
XX (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX RYbak SM, Newton DL;
XX WPI; 1999-610847/52.
XX N-PSDB; AAZ08125.
XX New recombinant ribonucleases, used for killing target cells, e.g. for treating cancers, viral infections or autoimmune diseases.
XX Claim 34; Page 56; 71pp; English.
XX The present sequence is a recombinant Rana pipiens ribonuclease (RapLRI) protein with Met23Leu. Carboxy terminal end of recombinant RapLRI has a covalently bound ligand binding moiety, which can be a L12 antibody directed against CD22 on cancerous B cells or human chorionic gonadotropin (hCG) effective against Kaposi's sarcoma cells. Recombinant

CC ribonucleases can be expressed in bacteria without an N-terminal methionine due to the presence of a signal peptide that is cleaved by bacteria. The soluble expression of ribonuclease allows the proteins to be fused in-frame with ligand binding moieties to form cytotoxic fusion proteins. They can be used for treatment of cancer and autoimmune diseases.

XX Sequence 104 AA;
SQ

Query Match 98.6%; Score 571; DB 2; Length 104;
Best Local Similarity 99.0%; Pred. No. 5.8e-62;
Matches 103; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 1 QDWLTFQKKHLNTRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGITASKNVLTT 60
DB 1 QDWLTFQKKHLNTRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGITASKNVLTT 60

QY 61 FEFYLSDCNVTSPCKYKLLKKSNTFCVCENQAPVHFVGVGHC 104
DB 61 FEFYLSDCNVTSPCKYKLLKKSNTFCVCENQAPVHFVGVGHC 104

RESULT 2
AAY28869
ID AAY28869 standard; protein; 105 AA.
XX
AC AAY28869;
XX
DT 25-JAN-2000 (first entry)
XX
DE Recombinant Met(-1) RapLr1 Met23Leu- (His) 6 protein.
XX
KW Recombinant Met(-1) Rana pipiens ribonuclease Met23Leu-(His)6; RapLr1; CD22; covalently bound; LL2 antibody; ligand binding moiety; RNase;
KW cancerous B cell; Kaposi's sarcoma; human chorionic gonadotropin; hCG; signal peptide; recombinant ribonuclease; cytotoxic fusion protein; cancer; frog; autoimmune disease.
XX
OS Rana pipiens.
OS Synthetic.

Key Location/Qualifiers
FH Misc-difference 1 /note= "Met not found in wild type RapLr1"
FT
FT Misc-difference 1 /note= "(His)6 histidine tag attached to N-terminal Met"
FT
FT Misc-difference 24 /note= "Wild type Met replaced with Leu"
FT
XX
XX WO9950398-A2.
XX
XX 07-OCT-1999.
XX
XX 26-MAR-1999; 99WO-US0006641.
XX
XX 27-MAR-1998; 98US-0079751P.
XX
XX (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
XX Rybak SM, Newton DL;
PI
XX WPI; 1999-610847/52.
DR
DR N-PSDB; AAZ08127.
XX
XX New recombinant ribonucleases, used for killing target cells, e.g. for treating cancers, viral infections or autoimmune diseases.
XX
XX Claim 4; Page 59; 71pp; English.
XX
XX The present sequence is a recombinant Rana pipiens ribonuclease protein (RapLr1) with Met at position 1 attached to (His)6 tag and Met24Leu. Carboxy terminal end of recombinant RapLr1 has a covalently bound ligand binding moiety, which can be a LL2 antibody directed against CD22 on

CC cancerous B cells or human chorionic gonadotropin (hCG) effective against Kaposi's sarcoma cells. Recombinant ribonucleases can be expressed in bacteria without an N-terminal methionine due to the presence of a signal peptide that is cleaved by bacteria. The soluble expression of ribonuclease allows the proteins to be fused in-frame with ligand binding moieties to form cytotoxic fusion proteins. They can be used for treatment of cancer and autoimmune diseases.

XX Sequence 105 AA;
SQ

Query Match 98.6%; Score 571; DB 2; Length 105;
Best Local Similarity 99.0%; Pred. No. 5.9e-62;
Matches 103; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 1 QDWLTFQKKHLNTRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGITASKNVLTT 60
DB 2 QDWLTFQKKHLNTRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGITASKNVLTT 61

QY 61 FEFYLSDCNVTSPCKYKLLKKSNTFCVCENQAPVHFVGVGHC 104
DB 62 SEFYLSDCNVTSPCKYKLLKKSNTFCVCENQAPVHFVGVGHC 105

RESULT 3
AAY28865
ID AAY28865 standard; protein; 104 AA.
XX
AC AAY28865;
XX
DT 25-JAN-2000 (first entry)
XX
DE Rana pipiens liver ribonuclease (RapLr1).
XX
KW Rana pipiens liver ribonuclease; RapLr1; covalently bound; LL2 antibody; ligand binding moiety; CD22; cancerous B cell; Kaposi's sarcoma; frog; human chorionic gonadotropin; hCG; recombinant ribonuclease; RNase; signal peptide; cytotoxic fusion protein; cancer; autoimmune disease.
XX
OS Rana pipiens.
XX
XX WO9950398-A2.
XX
XX 07-OCT-1999.
XX
XX 26-MAR-1999; 99WO-US0006641.
XX
XX 27-MAR-1998; 98US-0079751P.
XX
XX (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
XX Rybak SM, Newton DL;
PI
XX WPI; 1999-610847/52.
DR
DR N-PSDB; AAZ08124.
XX
XX New recombinant ribonucleases, used for killing target cells, e.g. for treating cancers, viral infections or autoimmune diseases.
XX
XX Claim 1; Page 55; 71pp; English.
XX
XX The present sequence is Rana pipiens liver ribonuclease (RapLr1) protein. Carboxy terminal end of RapLr1 has a covalently bound ligand binding moiety, which can be a LL2 antibody directed against CD22 on cancerous B cells or human chorionic gonadotropin (hCG) effective against Kaposi's sarcoma cells. Recombinant ribonucleases can be expressed in bacteria without an N-terminal methionine due to the presence of a signal peptide that is cleaved by bacteria. The soluble expression of ribonuclease allows the proteins to be fused in-frame with ligand binding moieties to form cytotoxic fusion proteins. They can be used for treatment of cancer and autoimmune diseases.

XX Sequence 104 AA;
SQ

Query Match 98.3%; Score 569; DB 2; Length 104;
 Best Local Similarity 98.1%; Pred. No. 1e-61;
 Matches 102; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 QDWLTFQKKHLTNTRDVDCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIISKNVLT 60
 Db 1 QDWLTFQKKHLTNTRDVDCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIISKNVLT 60
 QY 61 FEFYLSDCNVTSRPCKYKLLKSKTNTFCVTCENQAPVHFVGVGHC 104
 Db 61 SEFYLSDCNVTSRPCKYKLLKSKTNTFCVTCENQAPVHFVGVGHC 104

RESULT 4

RAY28867
 ID AAY28867 standard; protein; 105 AA.

XX AC AAY28867;

XX DT 25-JAN-2000 (first entry)

XX DE Recombinant Met (-1) RaPLR1.

XX KW Recombinant Met (-1) Rana pipiens ribonuclease; RaPLR1; CD22; RNase;
 KW covalently bound; LL2 antibody; ligand binding moiety; cancerous B cell;
 KW Kaposi's sarcoma; human chorionic gonadotropin; hCG; signal peptide;
 KW recombinant ribonuclease; cytotoxic fusion protein; cancer; frog;
 KW autoimmune disease.

XX OS Rana pipiens.

XX OS Synthetic.

XX FH Key

FT Misc-difference 1 Location/Qualifiers

FT /note= "Met not found in wild type RaPLR1"

XX PN WO9950398-A2.

XX PD 07-OCT-1999.

XX PF 26-MAR-1999; 99WO-US006641.

XX PR 27-MAR-1998; 98US-0079751P.

XX PA (USSH) US DEPT HEALTH & HUMAN SERVICES.

XX PI Rybak SM, Newton DL;

XX DR WPI; 1999-610847/52.

XX DR N-PSDB; AAZ08126.

XX PT New recombinant ribonucleases, used for killing target cells, e.g. for
 treating cancers, viral infections or autoimmune diseases.
 XX PS Claim 34; Page 57; 71pp; English.

XX CC The present sequence is a recombinant Rana pipiens ribonuclease (RaPLR1)
 CC protein with Met at position 1. Carboxy terminal end of recombinant
 CC RaPLR1 has a covalently bound ligand binding moiety, which can be a LL2
 CC antibody directed against CD22 on cancerous B cells or human chorionic
 CC gonadotropin (hCG) effective against Kaposi's sarcoma cells. Recombinant
 CC ribonucleases can be expressed in bacteria without an N-terminal
 CC methionine due to the presence of a signal peptide that is cleaved by
 CC bacteria. The soluble expression of ribonuclease allows the proteins to
 CC be fused in-frame with ligand binding moieties to form cytotoxic fusion
 CC proteins. They can be used for treatment of cancer and autoimmune
 CC diseases

XX SQ Sequence 105 AA;

Query Match

Best Local Similarity 98.3%; Score 569; DB 2; Length 105;
 Matches 102; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 QDWLTFQKKHLTNTRDVDCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIISKNVLT 60
 Db 2 QDWLTFQKKHLTNTRDVDCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIISKNVLT 61
 QY 61 FEFYLSDCNVTSRPCKYKLLKSKTNTFCVTCENQAPVHFVGVGHC 104
 Db 62 SEFYLSDCNVTSRPCKYKLLKSKTNTFCVTCENQAPVHFVGVGHC 105

RESULT 5

RAY28879

ID AAY28879 standard; protein; 127 AA.

XX AC AAY28879;

XX DT 25-JAN-2000 (first entry)

XX DE Rana pipiens Clone 5alb ribonuclease.

XX KW Rana pipiens ribonuclease Clone 5alb; RaPLR1; covalently bound; RNase;
 KW LL2 antibody; ligand binding moiety; CD22; cancerous B cell; onconase;
 KW Kaposi's sarcoma; human chorionic gonadotropin; hCG; cancer;
 KW recombinant ribonuclease; frog; signal peptide; cytotoxic fusion protein;
 KW autoimmune disease.

XX OS Rana pipiens.

XX FH Key

FT Location/Qualifiers

FT 1..23

FT /label= Signal peptide

FT /note= "Putative"

FT 24..127

FT /label= Rana_pipiens_Clone_5alb_ribonuclease

XX PN WO9950398-A2.

XX PD 07-OCT-1999.

XX PF 26-MAR-1999; 99WO-US006641.

XX PR 27-MAR-1998; 98US-0079751P.

XX PA (USSH) US DEPT HEALTH & HUMAN SERVICES.

XX PI Rybak SM, Newton DL;

XX DR WPI; 1999-610847/52.

XX DR N-PSDB; AAZ08136.

XX PT New recombinant ribonucleases, used for killing target cells, e.g. for
 treating cancers, viral infections or autoimmune diseases.
 XX PS Disclosure; Page 69; 71pp; English.

XX CC The present sequence is a Rana pipiens Clone 5alb ribonuclease (RaPLR1).
 CC It is encoded by Clone 5alb cDNA obtained from Rana pipiens liver mRNA
 CC library. It exhibits differences with Onconase (RTM) at amino acid
 CC residues 11, 20, 85 and 103. Carboxy terminal end of RaPLR1 has a
 CC covalently bound ligand binding moiety, which can be a LL2 antibody
 CC directed against CD22 on cancerous B cells or human chorionic
 CC gonadotropin (hCG) effective against Kaposi's sarcoma cells. Recombinant
 CC ribonucleases can be expressed in bacteria without an N-terminal
 CC methionine due to the presence of a signal peptide that is cleaved by
 CC bacteria. The soluble expression of ribonuclease allows the proteins to
 CC be fused in-frame with ligand binding moieties to form cytotoxic fusion
 CC proteins. They can be used for treatment of cancer and autoimmune
 CC diseases

XX SQ Sequence 127 AA;

Query Match

Best Local Similarity 98.3%; Score 569; DB 2; Length 127;
 Best Local Similarity 98.1%; Pred. No. 1.3e-61;

Matches	102;	Conservative	1;	Mismatches	1;	Indels	0;	Gaps	0;	
QY	1	QDWLTFOKKHLTNTRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT	60							
Db	24	QDWLTFOKKHLTNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT	83							
QY	61	FEYILSDCNTVSRPCKYKLIKSSNTFCVTCENQAPVHFVGHC	104							
Db	84	SEFYLSDCNVTSPCKYKLIKSSNTFCVTCENQAPVHFVGHC	127							
RESULT	6									
AAV28870										
ID	AAV28870	standard; protein; 104 AA.								
XX	AAV28870;									
XX	25-JAN-2000	(first entry)								
XX	Recombinant	RaPLR1 Gln1Ser amino acid sequence.								
XX	Recombinant	Rana pipiens ribonuclease; RaPLR1 Gln1Ser; covalently bound;								
KW	LL2 antibody;	ligand binding moiety; CD22; cancerous B cell; frog;								
KW	Kaposi's sarcoma;	human chorionic gonadotropin; hCG; signal peptide;								
KW	recombinant ribonuclease;	cytotoxic fusion protein; cancer; RNase;								
XX	autoimmune disease.									
XX	Rana pipiens.									
OS	Synthetic.									
XX	Key	Location/Qualifiers								
FX	Misc-difference 1	/note= "Wild type Gln replaced with Ser"								
FT	FT									
XX	WC9950398-A2.									
XX	07-OCT-1999.									
XX	26-MAR-1999;	99WO-US006641.								
XX	27-MAR-1998;	98US-0079751P.								
PR	(USSH)	US DEPT HEALTH & HUMAN SERVICES.								
XX	Rybak SM,	Newton DL;								
XX	WPI;	1999-610847/52.								
DR	N-PSDB;	AAZ08128.								
DR	New recombinant	ribonucleases, used for killing target cells, e.g. for								
PT	treating cancers,	viral infections or autoimmune diseases.								
PT	Claim 34;	Page 60; 7lpp; English.								
XX	The present	sequence is a recombinant Rana pipiens ribonuclease (RaPLR1)								
CC	protein with	Gln1Ser. Carboxy terminal end of recombinant RaPLR1 has a								
CC	covalently bound	ligand binding moiety, which can be a LL2 antibody								
CC	directed against	CD22 on cancerous B cells or human chorionic								
CC	gonadotropin (hCG)	effective against Kaposi's sarcoma cells. Recombinant								
CC	ribonucleases	can be expressed in bacteria without an N-terminal								
CC	methionine due	to the presence of a signal peptide that is cleaved by								
CC	bacteria. The	soluble expression of ribonuclease allows the proteins to								
CC	be fused in-	frame with ligand binding moieties to form cytotoxic fusion								
CC	proteins. They	can be used for treatment of cancer and autoimmune								
CC	diseases									
XX	Sequence	104 AA;								
XX	Query Match	97.4%;	Score	564;	DB	2;	Length	104;		
XX	Best Local Similarity	96.1%;	Pred. No.	4.2e-61;						
XX	Matches	101;	Conservative	1;	Mismatches	1;	Indels	0;	Gaps	0;
QY	2	DWLTFOKKHLTNTRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT	61							

XX (ALFA-) ALFACELL CORP.
 XX Saxena SK;
 PI WPI; 2001-167808/17.
 DR
 XX New nucleic acids encoding a ribonuclease (Rnase), useful for the precise
 PT targeting of Rnase to a predetermined cell receptor.
 PT
 XX Claim 1; Col 5-6; 7pp; English.
 PS
 XX The present sequence represents a frog ribonuclease protein (ranpirnase)
 CC (RNase). The specification describes a synthetic ribonuclease protein, in
 CC which the addition of cysteine in the ribonuclease facilitates the
 CC chemical linking of a targeting molecule by the single reactive
 CC sulphydryl group. The specification also describes a method for the
 CC production of ranpirnase using DNA technology instead of processing
 CC biological material. The re-engineering of the protein molecule allows
 CC easier attachment to a targeting molecule thereby making it possible for
 CC the ribonuclease to be delivered to a particular cell receptor where it
 CC might be most effective
 CC
 XX Sequence 104 AA;
 SQ

Query Match 94.5%; Score 547; DB 4; Length 104;
 Best Local Similarity 94.2%; Pred. No. 5.2e-59;
 Matches 98; Conservative 3; Mismatches 3; Indels 0; Gaps 0;
 QY 1 QDWLTQKKHLNTRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLTT 60
 Db 1 QDWLTQKKHLNTRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLTT 60
 QY 61 FFEYLSDCNVTSPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 104
 Db 61 SFEYLSDCNVTSPCKYKLLKSTNTFCVTCENQAPVHFVGVGSC 104

RESULT 11
 ABG32650
 ID ABG32650 standard; protein; 104 AA.
 XX
 AC ABG32650;
 XX
 XX 15-NOV-2002 (first entry)
 DT
 XX Northern leopard frog ranpirnase protein.
 XX Northern leopard frog; ranpirnase; site-directed mutation; ribonuclease.
 XX Rana pipiens.
 OS
 XX US6423515-B1.
 PN
 XX 23-JUL-2002.
 PD
 XX 14-OCT-2000; 2000US-00687748.
 PF
 XX 10-SEP-1999; 99US-00394268.
 PR
 XX (ALFA-) ALFACELL CORP.
 PA
 XX Saxena SK;
 PI WPI; 2002-664633/71.
 DR
 XX Constructing isolated nucleic acid encoding ribonuclease, by subjecting
 PT desired recombinant plasmid DNA to different site-directed mutations to
 PT produce nucleic acid, using different polymerase chain reaction
 PT protocols.
 PT
 XX Claim 1; Col 5-6; 8pp; English.
 PS
 XX

CC The present invention relates to a new method of constructing isolated
 CC nucleic acid encoding ribonuclease protein with N-terminal Met at
 CC position -1 and Glu at position 1, where its Met has been cleaved and its
 CC Glu has been autocyclised. The method of the invention involves
 CC subjecting pE11d-rOnc(Q1,M23L) plasmid DNA to two different site-
 CC directed mutations, each using overlapping PCR protocol. The method is
 CC useful for constructing an isolated nucleic acid encoding the
 CC ribonuclease. The present amino acid sequence represents the northern
 CC leopard frog ranpirnase protein of the invention
 XX
 XX Sequence 104 AA;
 SQ

Query Match 94.5%; Score 547; DB 5; Length 104;
 Best Local Similarity 94.2%; Pred. No. 5.2e-59;
 Matches 98; Conservative 3; Mismatches 3; Indels 0; Gaps 0;
 QY 1 QDWLTQKKHLNTRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLTT 60
 Db 1 QDWLTQKKHLNTRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLTT 60
 QY 61 FFEYLSDCNVTSPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 104
 Db 61 SFEYLSDCNVTSPCKYKLLKSTNTFCVTCENQAPVHFVGVGSC 104

RESULT 12
 AAW35126
 ID AAW35126 standard; protein; 379 AA.
 XX
 AC AAW35126;
 XX
 XX 20-APR-1998 (first entry)
 DT
 XX R. pipiens recombinant RNase rOnc fusion protein 2.
 DE
 XX RNase A; ribonuclease; cytotoxic; onconase; nOnc; immunofusion;
 KW tumour cell growth; frog.
 KW
 XX Rana pipiens.
 OS
 XX Synthetic.
 OS
 XX WO9731116-A2.
 PN
 XX 28-AUG-1997.
 PD
 XX 19-FEB-1997; 97WO-US002588.
 PF
 XX 21-FEB-1996; 96US-0011800P.
 PR
 XX (USSH) US DEPT HEALTH & HUMAN SERVICES.
 PA
 XX Rybak SM, Newton DL, Boque L, Wlodawer A;
 PI WPI; 1997-435168/40.
 XX N-PSDB; AAT94964.
 DR
 XX Ribonuclease molecules based on native Onconase - used for killing cells,
 PT particularly tumour cells.
 PT
 XX Disclosure; Page 68; 90pp; English.
 PS
 XX Sequences AAW35125 to AAW35135 represent recombinant fusion proteins
 CC (rOnc) which are modifications of the RNase Onconase (RTM) (nOnc). Such
 CC novel ribonuclease molecules are highly cytotoxic and can be used alone
 CC or to form chemical conjugates or to target recombinant immunofusions.
 CC They are used particularly for decreasing tumour cell growth. They can
 CC also be used for cell separation in vitro by selectively killing unwanted
 CC types of cells, e.g. in bone marrow prior to transplantation into a
 CC patient undergoing marrow ablation by radiation, or for killing leukaemia
 CC cells or T-cells that would cause graft versus host disease. The toxins
 CC can also be used to selectively kill unwanted cells in culture. The new
 CC ribonucleases have increased cytotoxic activity compared to nOnc and also
 CC lower immunogenicity in humans

```
XX SQ Sequence 379 AA;
Query Match 94.5%; Score 547; DB 2; Length 379;
Best Local Similarity 94.2%; Pred. No. 2.8e-58;
Matches 98; Conservative 3; Mismatches 3; Indels 0; Gaps 0;

QY 1 QDWLTFQKKHLNTRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 60
DB 26 QDWLTFQKKHLNTRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 85

QY 61 FEFYLSDCNVTSRPCKYKXKSTNTFCVTCENQAPVHFVGVGHC 104
DB 86 SEFYLSDCNVTSRPCKYKXKSTNTFCVTCENQAPVHFVGVGSC 129

RESULT 13
AAW30302
ID AAW30302 standard; protein; 104 AA.
XX AC AAW30302;
XX DT 09-JUN-1998 (first entry)
XX DE Recombinant onc protein.
XX KW Onc; oncanase; ribonuclease; frog; antitumour; pancreatic cancer;
XX KW human immunodeficiency virus type-1; HIV1; replication.
XX OS Rana pipiens.
XX OS Synthetic.
XX FH Key Location/Qualifiers
XX FT Modified-site 1
XX FT /note= "pyroglutamic acid; especially 2-pyrrolidone-5-
XX FT carboxylic acid or 5-oxo-2-pyrrolidinecarboxylic acid"
XX PN WO9738112-A1.
XX PD 16-OCT-1997.
XX PF 04-APR-1997; 97WO-US005675.
XX PR 04-APR-1996; 96US-00626288.
XX PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX PI Youle RJ, Vasandani VM, Wu Y, Boix E, Ardelt W;
XX WPI; 1997-512725/47.
XX PT Recombinant Onc protein with glutamine residue at position 1 - useful as
XX PT antitumour and antiviral agent, also as cell culture selection agent.
XX PS Claim 6; Page 28-29; 35pp; English.
XX CC This sequence represents a recombinant Onc protein comprising a 104 amino
XX CC acid sequence having Gln at position 1. Onc, a ribonuclease from Rana
XX CC pipiens oocytes, is known as an antitumour agent (e.g. for treating
XX CC pancreatic cancer) and inhibitor of human immunodeficiency virus type-1
XX CC replication. It can be used therapeutically or as a cell-culture
XX CC selection agent, e.g. to identify gene therapy compositions able to
XX CC inhibit tumour growth
XX SQ Sequence 104 AA;
Query Match 94.3%; Score 546; DB 2; Length 104;
Best Local Similarity 94.2%; Pred. No. 6.8e-59;
Matches 98; Conservative 3; Mismatches 3; Indels 0; Gaps 0;

QY 1 QDWLTFQKKHLNTRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 60
DB 1 EDWLTFFQKKHLNTRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 60
```

```
XX SQ Sequence 104 AA;
Query Match 94.0%; Score 544; DB 2; Length 104;
Best Local Similarity 93.3%; Pred. No. 1.2e-58;
Matches 97; Conservative 4; Mismatches 3; Indels 0; Gaps 0;

QY 1 QDWLTFQKKHLNTRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 60
DB 1 EDWLTFFQKKHLNTRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 60

QY 61 FEFYLSDCNVTSRPCKYKXKSTNTFCVTCENQAPVHFVGVGHC 104
DB 61 SEFYLSDCNVTSRPCKYKXKSTNTFCVTCENQAPVHFVGVGSC 104

RESULT 14
AAR12344
ID AAR12344 standard; protein; 104 AA.
XX AC AAR12344;
XX DT 08-AUG-1991 (first entry)
XX DE Protein with activity against cancer cells.
XX KW Frog eggs; Tamoxifen; Stelazine; cancer.
XX OS Rana pipiens.
XX PN WO9107435-A.
XX PD 30-MAY-1991.
XX PF 13-NOV-1989; 89US-00436141.
XX PR 13-NOV-1989; 89US-00436141.
XX PR 18-MAY-1990; 90US-00526314.
XX PA (ALFA-) ALFACELL CORP.
XX PI Ardelt WJ, Mikulski SM;
XX WPI; 1991-178059/24.
XX PT New protein from fertilised eggs of Rana pipiens - active against cancer
XX PT cells, esp. in combination with Tamoxifen or Stelazine (trifluoro-per-
XX PT azine).
XX PS Claim 7; Fig 2; 33pp; English.
XX CC The protein is derived from fertilised frog eggs. It has an iso-
XX CC electric point of 9.5 - 10.5, a blocked N-terminal gp. and is free of
XX CC carbohydrates. It is active against certain cancer cells. The combination
XX CC of the protein and (z-1-p-dimethylaminoethoxyphenyl)-1, 2-diphenyl-1-
XX CC butene) citrate salt (Tamoxifen) is much more bio- active than the
XX CC separate entities against human pancreatic ASPC-1 adenocarcinoma, and the
XX CC combination of protein and (10-[3-(4-methyl piperazin-1-yl)-propyl]-2-
XX CC trifluoromethylphenothiazine (Stelazine) is much more reactive than the
XX CC separate entities against human lung A-549 carcinoma. Activity has also
XX CC been shown against human sub- maxillary epidermoid carcinoma A-253
XX CC cells, human ovarian adeno- carcinoma NIH-OVCAR-3 cells, human leukaemic
XX CC HL-60 cells, human COLO 320 DM cells, human LOX melanoma and human lung
XX CC squamous car- cinoma HT-520 cells
XX SQ Sequence 104 AA;
Query Match 94.0%; Score 544; DB 2; Length 104;
Best Local Similarity 93.3%; Pred. No. 1.2e-58;
Matches 97; Conservative 4; Mismatches 3; Indels 0; Gaps 0;

QY 1 QDWLTFQKKHLNTRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 60
DB 1 EDWLTFFQKKHLNTRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 60

QY 61 FEFYLSDCNVTSRPCKYKXKSTNTFCVTCENQAPVHFVGVGHC 104
DB 61 SEFYLSDCNVTSRPCKYKXKSTNTFCVTCENQAPVHFVGVGSC 104

RESULT 15
AAR47303
ID AAR47303 standard; protein; 104 AA.
```

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XX AAR47303;
XX AC
XX DT 25-MAR-2003 (revised)
XX DT 09-SEP-1994 (first entry)
XX DE
XX DE ONCONASE (pharmaceutical protein).
XX KW Onconase; pharmaceutical; protein; adenocarcinoma; treatment; cisplatin;
XX KW melphalan; adriamycin; ovarian cancer; ovary.
XX OS Synthetic.
XX PN WO9403197-A1.
XX PD 17-FEB-1994.
XX PF 02-JUL-1993; 93WO-US006357.
XX PR 30-JUL-1992; 92US-00921180.
XX PA (ALFA-) ALFACELL CORP.
XX PI Mikulski SM, Ardelt WJ;
XX DR WPI; 1994-065396/08.
XX PT Pharmaceutical contg. Cisplatin, Melphalan or Adriamycin - active
XX PT in-vitro against OVCAR-3 human ovarian adenocarcinoma cells.
XX PS Claim 7; Page 13; 18pp; English.
XX CC This pharmaceutical protein (ONCONASE) is used in the production of a
XX CC bioactive pharmaceutical composition also comprising one of Cisplatin
XX CC (cis-diamminedichloroplatinum), Melphalan, (4-[bis-(2-chloroethyl)amino]
XX CC -L-phenylamine) or Adriamycin (Doxorubicin HCl). The composition has
XX CC bioactivity in vitro against OVCAR-3 human ovarian adenocarcinoma cells.
XX CC (Updated on 25-MAR-2003 to correct PN field.)
XX SQ Sequence 104 AA;

Query Match 94.0%; Score 544; DB 2; Length 104;
Best Local Similarity 93.3%; Pred. No. 1.2e-58;
Matches 97; Conservative 4; Mismatches 3; Indels 0; Gaps 0;

QY 1 QDWLTFQKKHLNTRDVDCCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIITASKNVLTT 60
Db :|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||
1 EDWLTQKKHINTRDVDCDNTIMSTNLFHCKDKNTFIYSRPEPVKAICKGIITASKNVLTT 60

QY 61 FEFYLSDCNVTSRPCPKYKLKKSINTFCVTCENQAPVHFVGVGHC 104
Db :|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||
61 SEFYLSDCNVTSRPCPKYKLKKSINTFCVTCENQAPVHFVGVGSC 104

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Job time : 44.363 secs
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OM protein - protein search, using sw model

Run on: May 7, 2004, 21:28:45 ; Search time 12.0636 Seconds

(without alignments)
445.066 Million cell updates/sec

Title: us-09-961-400-4

Perfect score: 579

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Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 389414 seqs, 51625971 residues

Total number of hits satisfying chosen parameters: 389414

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

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5: /cgn2_6/prodata/2/aa/PTUS COMB.pap.*
6: /cgn2_6/prodata/2/aa/backfiles1.pap.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	549	94.8	104	1	US-08-467-955-2
2	547	94.5	104	3	US-09-394-268-1
3	547	94.5	104	4	US-09-687-748-1
4	547	94.5	104	4	US-08-626-288-1
5	547	94.5	104	4	US-09-095-429-1
6	547	94.5	129	3	US-08-875-811-63
7	547	94.5	379	3	US-08-875-811-43
8	544	94.0	104	1	US-08-283-971-1
9	544	94.0	104	1	US-07-921-619-1
10	544	94.0	104	1	US-08-467-955-1
11	544	94.0	104	2	US-08-891-848-13
12	544	94.0	104	3	US-09-394-268-2
13	544	94.0	104	4	US-09-687-748-2
14	544	94.0	104	4	US-08-626-288-2
15	544	94.0	104	4	US-09-095-429-2
16	544	94.0	105	3	US-08-875-811-39
17	544	94.0	355	3	US-08-875-811-41
18	544	94.0	358	3	US-08-875-811-51
19	542	93.6	104	3	US-08-875-811-1
20	542	93.6	104	4	US-09-071-672-1
21	542	93.6	104	4	US-09-986-119-1
22	542	93.6	106	3	US-08-875-811-28
23	542	93.6	107	3	US-08-875-811-30
24	542	93.6	112	3	US-08-875-811-32
25	542	93.6	251	3	US-08-875-811-59
26	542	93.6	254	3	US-08-875-811-61
27	542	93.6	355	3	US-08-875-811-49

28 542 93.6 355 3 US-08-875-811-57 Sequence 57, Appl
29 542 93.6 355 3 US-08-875-811-64 Sequence 64, Appl
30 542 93.6 366 3 US-08-875-811-55 Sequence 55, Appl
31 537 92.7 105 3 US-08-875-811-24 Sequence 24, Appl
32 537 92.7 105 3 US-08-875-811-26 Sequence 26, Appl
33 533 92.1 358 3 US-08-875-811-45 Sequence 45, Appl
34 533 92.1 365 3 US-08-875-811-53 Sequence 53, Appl
35 518 89.5 107 3 US-08-875-811-20 Sequence 20, Appl
36 481 83.1 360 3 US-08-875-811-47 Sequence 47, Appl
37 474.5 82.0 111 3 US-08-875-811-22 Sequence 22, Appl
38 436 75.3 83 3 US-08-875-811-2 Sequence 2, Appl
39 436 75.3 83 4 US-09-071-672-3 Sequence 3, Appl
40 436 75.3 83 4 US-09-986-119-3 Sequence 3, Appl
41 283 48.9 111 2 US-08-891-848-12 Sequence 12, Appl
42 283 48.9 111 3 US-08-875-811-8 Sequence 8, Appl
43 211.5 36.5 114 3 US-09-223-118-4 Sequence 4, Appl
44 199.5 34.5 114 3 US-09-223-118-2 Sequence 2, Appl
45 198.5 34.3 114 3 US-09-223-118-1 Sequence 1, Appl

ALIGNMENTS

RESULT 1

US-08-467-955-2
; Sequence 2, Application US/08467955
; Patent No. 5728805
; GENERAL INFORMATION:
; APPLICANT: Ardelt Ph.D, Wojciech J.
; TITLE OF INVENTION: PHARMACEUTICALS AND METHOD FOR MAKING THEM
; NUMBER OF SEQUENCES: 2
; CORRESPONDENCE ADDRESS:
; ADDRESSER: Mark H. Jay, P.A.
; STREET: P.O. Box E
; CITY: Short Hills
; STATE: New Jersey
; COUNTRY: USA
; ZIP: 07078-0383
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent In Release #1.24
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/467,955
; FILING DATE:
; CLASSIFICATION: 435
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 07/178,118
; FILING DATE: 06-APR-1988
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 07/436,141
; FILING DATE: 13-NOV-1989
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 07/814,332
; FILING DATE: 03-FEB-1992
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 08/283,970
; FILING DATE: 01-AUG-1994
; ATTORNEY/AGENT INFORMATION:
; NAME: Jay, Mark H.
; REGISTRATION NUMBER: 27507
; REFERENCE/DOCKET NUMBER: 5007 US
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 201-912-9066
; TELEFAX: 201-912-0442
; TELEX: No. 5728805 Applicable
; INFORMATION FOR SEQ ID NO: 2:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 104 amino acids
; TYPE: amino acid
; STRANDEDNESS: single
; TOPOLOGY: linear

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; MOLECULE TYPE: protein
; HYPOTHETICAL: N
; ANTI-SENSE: N
; FRAGMENT TYPE: N-terminal
; ORIGINAL SOURCE:
; ORGANISM: Rana pipiens
; DEVELOPMENTAL STAGE: Oocyte
US-08-467-955-2

Query Match          94.8%; Score 549; DB 1; Length 104;
Best Local Similarity 94.2%; Pred. No. 8.1e-50;
Matches 98; Conservative 3; Mismatches 3; Indels 0; Gaps 0;

QY 1 QDWLTFQKKHLNTRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 60
Db 1 EDWLTQKKHVNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 60

QY 61 FEFYLSDCNVTSPCKYKLLKSKSTNTFCVTCENQAPVHFVGVGHC 104
Db 61 SEFYLSDCNVTSPCKYKLLKSKSTNTFCVTCENQAPVHFVGVGSC 104

RESULT 2
US-09-394-268-1
; Sequence 1, Application US/09394268
; Patent No. 6175003
; GENERAL INFORMATION:
; APPLICANT: Saxena, Shailendra K
; TITLE OF INVENTION: NUCLEIC ACIDS ENCODING RIBONUCLEASES AND METHODS OF
; MAKING THEM
; FILE REFERENCE: 5013
; CURRENT APPLICATION NUMBER: US/09/394,268
; CURRENT FILING DATE: 1999-09-10
; NUMBER OF SEQ ID NOS: 8
; SOFTWARE: Patentin Ver. 2.0
; SEQ ID NO 1
; LENGTH: 104
; TYPE: PRT
; ORGANISM: Rana pipiens
US-09-394-268-1

Query Match          94.5%; Score 547; DB 3; Length 104;
Best Local Similarity 94.2%; Pred. No. 1.4e-59;
Matches 98; Conservative 3; Mismatches 3; Indels 0; Gaps 0;

QY 1 QDWLTFQKKHLNTRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 60
Db 1 QDWLTFQKKHINTNRDVCNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 60

QY 61 FEFYLSDCNVTSPCKYKLLKSKSTNTFCVTCENQAPVHFVGVGHC 104
Db 61 SEFYLSDCNVTSPCKYKLLKSKSTNTFCVTCENQAPVHFVGVGSC 104

RESULT 3
US-09-687-748-1
; Sequence 1, Application US/09687748
; Patent No. 6423515
; GENERAL INFORMATION:
; APPLICANT: Saxena, Shailendra K
; TITLE OF INVENTION: METHODS OF MAKING NUCLEIC ACIDS ENCODING RIBONUCLEASES
; FILE REFERENCE: 5013 US 01
; CURRENT APPLICATION NUMBER: US/09/687,748
; CURRENT FILING DATE: 2000-10-14
; PRIOR APPLICATION NUMBER: 09/394,268
; PRIOR FILING DATE: 1999-09-10
; NUMBER OF SEQ ID NOS: 8
; SOFTWARE: Patentin Ver. 2.0
; SEQ ID NO 1
; LENGTH: 104
; TYPE: PRT
; ORGANISM: Rana pipiens
US-09-687-748-1
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Query Match          94.5%; Score 547; DB 4; Length 104;
Best Local Similarity 94.2%; Pred. No. 1.4e-59;
Matches 98; Conservative 3; Mismatches 3; Indels 0; Gaps 0;

QY 1 QDWLTFQKKHLNTRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 60
Db 1 QDWLTFQKKHINTNRDVCNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 60

QY 61 FEFYLSDCNVTSPCKYKLLKSKSTNTFCVTCENQAPVHFVGVGHC 104
Db 61 SEFYLSDCNVTSPCKYKLLKSKSTNTFCVTCENQAPVHFVGVGSC 104

RESULT 4
US-08-626-288-1
; Sequence 1, Application US/08626288
; Patent No. 6649392
; GENERAL INFORMATION:
; APPLICANT: Youle, Richard
; APPLICANT: Vasandani, Veena
; APPLICANT: Wu, Yon-Neng
; APPLICANT: Boix, Ester
; APPLICANT: Ardelet, Wojciech
; TITLE OF INVENTION: A Mutant Form of Cytotoxic Protein Which
; TITLE OF INVENTION: Allows Production by Recombinant Methods
; NUMBER OF SEQUENCES: 3
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Townsend and Townsend and Crew
; STREET: One Market Plaza, Steuart Street Tower
; CITY: San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94105-1492
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patentin Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/626,288
; FILING DATE: No. 6649392 yet assigned
; CLASSIFICATION: 530
; ATTORNEY/AGENT INFORMATION:
; NAME: Ran, David B.
; REGISTRATION NUMBER: 38,589
; REFERENCE/DOCKET NUMBER: 15280-267
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (415) 543-9600
; TELEFAX: (415) 543-5043
; INFORMATION FOR SEQ ID NO: 1:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 104 amino acids
; TYPE: amino acid
; STRANDEDNESS:
; TOPOLOGY: linear
; MOLECULE TYPE: protein
US-08-626-288-1

Query Match          94.5%; Score 547; DB 4; Length 104;
Best Local Similarity 94.2%; Pred. No. 1.4e-59;
Matches 98; Conservative 3; Mismatches 3; Indels 0; Gaps 0;

QY 1 QDWLTFQKKHLNTRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 60
Db 1 QDWLTFQKKHINTNRDVCNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 60

QY 61 FEFYLSDCNVTSPCKYKLLKSKSTNTFCVTCENQAPVHFVGVGHC 104
Db 61 SEFYLSDCNVTSPCKYKLLKSKSTNTFCVTCENQAPVHFVGVGSC 104

RESULT 5
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US-09-095-429-1
; Sequence 1, Application US/09095429
; Patent No. 6649393
; GENERAL INFORMATION:
; APPLICANT: Youle, Richard
; APPLICANT: Vasandani, Veena
; APPLICANT: Wu, Yon-Neng
; APPLICANT: Boix, Ester
; APPLICANT: Ardel, Wojciech
; TITLE OF INVENTION: A Mutant Form of Cytotoxic Protein Which
; TITLE OF INVENTION: Allows Production by Recombinant Methods
; NUMBER OF SEQUENCES: 3
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Townsend and Townsend and Crew
; STREET: One Market Plaza, Steuart Street Tower
; CITY: San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94105-1492
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patentin Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/09/095,429
; FILING DATE:
; CLASSIFICATION:
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: 08/626,288
; FILING DATE:
; NAME: Ran, David B.
; ATTORNEY/AGENT INFORMATION:
; REGISTRATION NUMBER: 38,589
; REFERENCE/DOCKET NUMBER: 15280-267
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (415) 543-9600
; TELEFAX: (415) 543-5043
; INFORMATION FOR SEQ ID NO: 1:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 104 amino acids
; TYPE: amino acid
; STRANDEDNESS:
; TOPOLOGY: linear
; MOLECULE TYPE: protein
US-09-095-429-1

Query Match 94.5%; Score 547; DB 4; Length 104;
Best Local Similarity 94.2%; Pred. No. 1.4e-59;
Matches 98; Conservative 3; Mismatches 3; Indels 0; Gaps 0;

QY 1 QDWLTFQKKHLTNTDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLTT 60
Db 1 QDWLTFQKKHLTNTDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLTT 60

QY 61 FEFLYSDCNVTSRCPCKYKLKSTNTFCVTCENQAPVHFVGVGHC 104
Db 61 SEFYLSDCNVTSRCPCKYKLKSTNKFVCVTCENQAPVHFVGVGSC 104

RESULT 6
US-08-875-811-63
; Sequence 63, Application US/08875811
; Patent No. 6045793
; GENERAL INFORMATION:
; APPLICANT: Rybak, Susanna M.
; APPLICANT: Newton, Dianne L.
; APPLICANT: Boque, Lluís
; APPLICANT: Wlodawer, Alexander
; TITLE OF INVENTION: Recombinant Ribonuclease Proteins
; NUMBER OF SEQUENCES: 64
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Townsend and Townsend and Crew LLP

; STREET: Two Embarcadero Center, Eighth Floor
; CITY: San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94111-3834
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patentin Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/875,811
; FILING DATE: 19-FEB-1998
; CLASSIFICATION: 435
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: WO PCT/US97/02588
; FILING DATE: 19-FEB-1997
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 60/011,800
; FILING DATE: 21-FEB-1996
; ATTORNEY/AGENT INFORMATION:
; NAME: Paris, Susan K.
; REGISTRATION NUMBER: 41,739
; REFERENCE/DOCKET NUMBER: 015280-244100US
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (415) 576-0200
; TELEFAX: (415) 576-0300
; INFORMATION FOR SEQ ID NO: 63:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 129 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: protein
US-08-875-811-63

Query Match 94.5%; Score 547; DB 3; Length 129;
Best Local Similarity 94.2%; Pred. No. 1.9e-59;
Matches 98; Conservative 3; Mismatches 3; Indels 0; Gaps 0;

QY 1 QDWLTFQKKHLTNTDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLTT 60
Db 26 QDWLTFQKKHLTNTDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLTT 85

QY 61 FEFLYSDCNVTSRCPCKYKLKSTNTFCVTCENQAPVHFVGVGHC 104
Db 86 SEFYLSDCNVTSRCPCKYKLKSTNKFVCVTCENQAPVHFVGVGSC 129

RESULT 7
US-08-875-811-43
; Sequence 43, Application US/08875811
; Patent No. 6045793
; GENERAL INFORMATION:
; APPLICANT: Rybak, Susanna M.
; APPLICANT: Newton, Dianne L.
; APPLICANT: Boque, Lluís
; APPLICANT: Wlodawer, Alexander
; TITLE OF INVENTION: Recombinant Ribonuclease Proteins
; NUMBER OF SEQUENCES: 64
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Townsend and Townsend and Crew LLP
; STREET: Two Embarcadero Center, Eighth Floor
; CITY: San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94111-3834
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patentin Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/875,811

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/ ; FILING DATE: 19-FEB-1998
/ ; CLASSIFICATION: 435
/ ; PRIORITY APPLICATION DATA:
/ ; APPLICATION NUMBER: WO PCT/US97/02568
/ ; FILING DATE: 19-FEB-1997
/ ; PRIORITY APPLICATION DATA:
/ ; APPLICATION NUMBER: US 60/011,800
/ ; FILING DATE: 21-FEB-1996
/ ; ATTORNEY/AGENT INFORMATION:
/ ; NAME: Faris, Susan K.
/ ; REGISTRATION NUMBER: 41,739
/ ; REFERENCE/DOCKET NUMBER: 015280-244100US
/ ; TELECOMMUNICATION INFORMATION:
/ ; TELEPHONE: (415) 576-0200
/ ; TELEFAX: (415) 576-0300
/ ; INFORMATION FOR SEQ ID NO: 43:
/ ; SEQUENCE CHARACTERISTICS:
/ ; LENGTH: 379 amino acids
/ ; TYPE: amino acid
/ ; TOPOLOGY: linear
/ ; MOLECULE TYPE: protein
/ ; US-08-875-811-43

Query Match 94.5%; Score 547; DB 3; Length 379;
Best Local Similarity 94.2%; Pred. No. 7.7e-59;
Matches 98; Conservative 3; Mismatches 3; Indels 0; Gaps 0;

QY 1 QDWLTPQKKHLNTRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 60
Db 26 QDWLTPQKKHLNTRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 85

QY 61 FEFYLSDCNVTSRPCYKYLKKSNTFCVTCENQAPVHFVGVGHC 104
Db 86 SEFYLSDCNVTSRPCYKYLKKSNTFCVTCENQAPVHFVGVGSC 129

RESULT 8
US-08-283-971-1
; Sequence 1, Application US/08283971
; Patent No. 5529775
; GENERAL INFORMATION:
; APPLICANT: Ardelt Ph.D, Wojciech J.
; APPLICANT: Mikulski, Stanislaw M.
; TITLE OF INVENTION: PHARMACEUTICAL FOR TREATING TUMORS IN HUMANS
; NUMBER OF SEQUENCES: 1
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Mark H. Jay, P.C.
; STREET: P.O. Box 020083, General Post Office
; CITY: Brooklyn
; STATE: New York
; COUNTRY: USA
; ZIP: 11202-0002
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent In Release #1.24
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/283,971
; FILING DATE:
; CLASSIFICATION: 435
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 07/921,180
; FILING DATE: 30-JUL-1992
; APPLICATION NUMBER: US 07/178,118
; FILING DATE: 06-APR-1988
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 07/436,141
; FILING DATE: 13-NOV-1989
; ATTORNEY/AGENT INFORMATION:
; NAME: Jay, Mark H.
; REGISTRATION NUMBER: 27507
; REFERENCE/DOCKET NUMBER: 5006 US
```

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/ ; TELECOMMUNICATION INFORMATION:
/ ; TELEPHONE: 718-625-0399
/ ; TELEFAX: 718-625-0399
/ ; TELEX: No. 5529775 Applicable
/ ; INFORMATION FOR SEQ ID NO: 1:
/ ; SEQUENCE CHARACTERISTICS:
/ ; LENGTH: 104 amino acids
/ ; TYPE: amino acid
/ ; STRANDEDNESS: single
/ ; TOPOLOGY: linear
/ ; MOLECULE TYPE: protein
/ ; HYPOTHETICAL: N
/ ; ANTI-SENSE: N
/ ; FRAGMENT TYPE: N-terminal
/ ; ORIGINAL SOURCE:
/ ; ORGANISM: Rana pipiens
/ ; DEVELOPMENTAL STAGE: Embryo
/ ; US-08-283-971-1

Query Match 94.0%; Score 544; DB 1; Length 104;
Best Local Similarity 93.3%; Pred. No. 3.3e-59;
Matches 97; Conservative 4; Mismatches 3; Indels 0; Gaps 0;

QY 1 QDWLTPQKKHLNTRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 60
Db 1 EDWLTPQKKHLNTRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 60

QY 61 FEFYLSDCNVTSRPCYKYLKKSNTFCVTCENQAPVHFVGVGHC 104
Db 61 SEFYLSDCNVTSRPCYKYLKKSNTFCVTCENQAPVHFVGVGSC 104

RESULT 9
US-07-921-619-1
; Sequence 1, Application US/07921619
; Patent No. 5595734
; GENERAL INFORMATION:
; APPLICANT: Ardelt Ph.D, Wojciech J.
; APPLICANT: Mikulski, Stanislaw M.
; TITLE OF INVENTION: PHARMACEUTICAL FOR TREATING TUMORS IN HUMANS
; NUMBER OF SEQUENCES: 1
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Mark H. Jay, P.C.
; STREET: P.O. Box 020083, General Post Office
; CITY: Brooklyn
; STATE: New York
; COUNTRY: USA
; ZIP: 11202-0002
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent In Release #1.24
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/07/921,619
; FILING DATE: 19920728
; CLASSIFICATION: 530
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 07/178,118
; FILING DATE: 06-APR-1988
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 07/436,141
; FILING DATE: 13-NOV-1989
; ATTORNEY/AGENT INFORMATION:
; NAME: Jay, Mark H.
; REGISTRATION NUMBER: 27507
; REFERENCE/DOCKET NUMBER: 5005 US
/ ; TELECOMMUNICATION INFORMATION:
/ ; TELEPHONE: 718-625-0399
/ ; TELEFAX: 718-625-0399
/ ; TELEX: No. 5595734 Applicable
/ ; INFORMATION FOR SEQ ID NO: 1:
/ ; SEQUENCE CHARACTERISTICS:
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/ LENGTH: 104 amino acids
/ TYPE: AMINO ACID
/ STRANDEDNESS: single
/ TOPOLOGY: linear
/ MOLECULE TYPE: protein
/ HYPOTHETICAL: N
/ ANTI-SENSE: N
/ FRAGMENT TYPE: N-terminal
/ ORIGINAL SOURCE:
/ ORGANISM: Rana pipiens
/ DEVELOPMENTAL STAGE: Embryo
/
US-07-921-619-1
Query Match 94.0%; Score 544; DB 1; Length 104;
Best Local Similarity 93.3%; Pred. No. 3.3e-59;
Matches 97; Conservative 4; Mismatches 3; Indels 0; Gaps 0;

QY 1 QDWLTFQKKHITNTRDVDCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 60
DB 1 EDWLTFFQKKHITNTRDVDCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 60

QY 61 PEFYLSDCNVTSRPCKYKLLKSTNTFCVTCENQAPVHFVGCHC 104
DB 61 SEFYLSDCNVTSRPCKYKLLKSTNTKFCVTCENQAPVHFVGCHC 104

RESULT 10
US-08-467-955-1
/ Sequence 1, Application US/08467955
/ Patent No. 5728805
/ GENERAL INFORMATION:
/ APPLICANT: Ardelt Ph.D. Wojcietech J.
/ TITLE OF INVENTION: PHARMACEUTICALS AND METHOD FOR MAKING THEM
/ NUMBER OF SEQUENCES: 2
/ CORRESPONDENCE ADDRESS:
/ STREET: P.O. Box E
/ CITY: Short Hills
/ STATE: New Jersey
/ COUNTRY: USA
/ ZIP: 07078-0383
/ COMPUTER READABLE FORM:
/ MEDIUM TYPE: Floppy disk
/ COMPUTER: IBM PC compatible
/ OPERATING SYSTEM: PC-DOS/MS-DOS
/ SOFTWARE: Patent In Release #1.24
/ CURRENT APPLICATION DATA:
/ APPLICATION NUMBER: US/08/467,955
/ FILING DATE:
/ CLASSIFICATION: 435
/ PRIOR APPLICATION DATA:
/ APPLICATION NUMBER: US 07/178,118
/ FILING DATE: 06-APR-1988
/ PRIOR APPLICATION DATA:
/ APPLICATION NUMBER: US 07/436,141
/ FILING DATE: 13-NOV-1989
/ PRIOR APPLICATION DATA:
/ APPLICATION NUMBER: US 07/814,332
/ FILING DATE: 03-FEB-1992
/ PRIOR APPLICATION DATA:
/ APPLICATION NUMBER: US 08/283,970
/ FILING DATE: 01-AUG-1994
/ ATTORNEY/AGENT INFORMATION:
/ NAME: Jay, Mark H.
/ REGISTRATION NUMBER: 27507
/ REFERENCE/DOCKET NUMBER: 5007 US
/ TELECOMMUNICATION INFORMATION:
/ TELEPHONE: 201-912-9066
/ TELEFAX: 201-912-0442
/ TELEX: No. 5728805 Applicable
/ INFORMATION FOR SEQ ID NO: 1:
/ SEQUENCE CHARACTERISTICS:
/ LENGTH: 104 amino acids
/
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/ TYPE: amino acid
/ STRANDEDNESS: single
/ TOPOLOGY: linear
/ MOLECULE TYPE: protein
/ HYPOTHETICAL: N
/ ANTI-SENSE: N
/ FRAGMENT TYPE: N-terminal
/ ORIGINAL SOURCE:
/ ORGANISM: Rana pipiens
/ DEVELOPMENTAL STAGE: Oocyte
/
US-08-467-955-1
Query Match 94.0%; Score 544; DB 1; Length 104;
Best Local Similarity 93.3%; Pred. No. 3.3e-59;
Matches 97; Conservative 4; Mismatches 3; Indels 0; Gaps 0;

QY 1 QDWLTFQKKHITNTRDVDCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 60
DB 1 EDWLTFFQKKHITNTRDVDCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 60

QY 61 PEFYLSDCNVTSRPCKYKLLKSTNTFCVTCENQAPVHFVGCHC 104
DB 61 SEFYLSDCNVTSRPCKYKLLKSTNTKFCVTCENQAPVHFVGCHC 104

RESULT 11
US-08-891-848-13
/ Sequence 13, Application US/08891848
/ Patent No. 5955073
/ GENERAL INFORMATION:
/ APPLICANT: Rybak, Susanna M.
/ APPLICANT: Youle, Richard J.
/ APPLICANT: Newton, Dianne L.
/ APPLICANT: Nicholls, Peter J.
/ TITLE OF INVENTION: Selective RNase Cytotoxic Reagents
/ NUMBER OF SEQUENCES: 19
/ CORRESPONDENCE ADDRESS:
/ ADDRESSEE: Townsend and Townsend and Crew LLP
/ STREET: Two Embarcadero Center, Eighth Floor
/ CITY: San Francisco
/ STATE: California
/ COUNTRY: USA
/ ZIP: 94111-3834
/ COMPUTER READABLE FORM:
/ MEDIUM TYPE: Floppy disk
/ COMPUTER: IBM PC compatible
/ OPERATING SYSTEM: PC-DOS/MS-DOS
/ SOFTWARE: Patent In Release #1.0, Version #1.30
/ CURRENT APPLICATION DATA:
/ APPLICATION NUMBER: US/08/891,848
/ FILING DATE: No. 5955073 yet assigned
/ CLASSIFICATION: 530
/ PRIOR APPLICATION DATA:
/ APPLICATION NUMBER: US 08/125,462
/ FILING DATE: 22-SEP-1993
/ PRIOR APPLICATION DATA:
/ APPLICATION NUMBER: US 08/014,082
/ FILING DATE: 04-FEB-1993
/ PRIOR APPLICATION DATA:
/ APPLICATION NUMBER: US 07/779,195
/ FILING DATE: 22-OCT-1991
/ PRIOR APPLICATION DATA:
/ APPLICATION NUMBER: US 07/510,696
/ FILING DATE: 20-APR-1990
/ ATTORNEY/AGENT INFORMATION:
/ NAME: Weber, Ellen Lauver
/ REGISTRATION NUMBER: 32,762
/ REFERENCE/DOCKET NUMBER: 015280-110310US
/ TELECOMMUNICATION INFORMATION:
/ TELEPHONE: (415) 576-0200
/ TELEFAX: (415) 576-0300
/ INFORMATION FOR SEQ ID NO: 13:
/ SEQUENCE CHARACTERISTICS:
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/ LENGTH: 104 amino acids
/ TYPE: amino acid
/ STRANDEDNESS:
/ TOPOLOGY: linear
/ MOLECULE TYPE: protein
/ FEATURE:
/ NAME/KEY: Protein
/ LOCATION: 1..104
/ OTHER INFORMATION: /label= Onc
/ OTHER INFORMATION: /note= "Oncanase from Rana pipiens"
US-08-891-848-13

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Best Local Similarity 93.3%; Pred. No. 3.3e-59;
Matches 97; Conservative 4; Mismatches 3; Indels 0; Gaps 0;

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RESULT 12
US-09-394-268-2
/ Sequence 2, Application US/09394268
/ Patent No. 6175003
/ GENERAL INFORMATION:
/ APPLICANT: Saxena, Shailendra K
/ TITLE OF INVENTION: NUCLEIC ACIDS ENCODING RIBONUCLEASES AND METHODS OF
/ FILE REFERENCE: 5013
/ CURRENT APPLICATION NUMBER: US/09/394,268
/ CURRENT FILING DATE: 1999-09-10
/ NUMBER OF SEQ ID NOS: 8
/ SOFTWARE: PatentIn Ver. 2.0
/ SEQ ID NO 2
/ LENGTH: 104
/ TYPE: PRT
/ ORGANISM: Artificial Sequence
/ FEATURE:
/ OTHER INFORMATION: SEQ ID NO:1 with Leu at position 23 and Cys at
/ OTHER INFORMATION: position 72
US-09-394-268-2

Query Match          94.0%; Score 544; DB 3; Length 104;
Best Local Similarity 94.2%; Pred. No. 3.3e-59;
Matches 98; Conservative 2; Mismatches 4; Indels 0; Gaps 0;

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RESULT 13
US-09-687-748-2
/ Sequence 2, Application US/09687748
/ Patent No. 6423515
/ GENERAL INFORMATION:
/ APPLICANT: Saxena, Shailendra K
/ TITLE OF INVENTION: METHODS OF MAKING NUCLEIC ACIDS ENCODING RIBONUCLEASES
/ FILE REFERENCE: 5013 US 01
/ CURRENT APPLICATION NUMBER: US/09/687,748
/ CURRENT FILING DATE: 2000-10-14
/ PRIOR APPLICATION NUMBER: 09/394,268
/ PRIOR FILING DATE: 1999-09-10
/ NUMBER OF SEQ ID NOS: 8
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/ SOFTWARE: PatentIn Ver. 2.0
/ SEQ ID NO 2
/ LENGTH: 104
/ TYPE: PRT
/ ORGANISM: Artificial Sequence
/ FEATURE:
/ OTHER INFORMATION: SEQ ID NO:1 with Leu at position 23 and Cys at
/ OTHER INFORMATION: position 72
US-09-687-748-2

Query Match          94.0%; Score 544; DB 4; Length 104;
Best Local Similarity 94.2%; Pred. No. 3.3e-59;
Matches 98; Conservative 2; Mismatches 4; Indels 0; Gaps 0;

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RESULT 14
US-08-626-288-2
/ Sequence 2, Application US/08626288
/ Patent No. 6649392
/ GENERAL INFORMATION:
/ APPLICANT: Youle, Richard
/ APPLICANT: Vasandani, Veena
/ APPLICANT: Wu, Yon-Neng
/ APPLICANT: Boix, Ester
/ APPLICANT: Ardeit, Wojciech
/ TITLE OF INVENTION: A Mutant Form of Cytotoxic Protein Which
/ TITLE OF INVENTION: Allows Production by Recombinant Methods
/ NUMBER OF SEQUENCES: 3
/ CORRESPONDENCE ADDRESS:
/ ADDRESSEE: Townsend and Townsend and Crew
/ STREET: One Market Plaza, Steuart Street Tower
/ CITY: San Francisco
/ STATE: California
/ COUNTRY: USA
/ ZIP: 94105-1492
/ COMPUTER READABLE FORM:
/ MEDIUM TYPE: Floppy disk
/ COMPUTER: IBM PC compatible
/ OPERATING SYSTEM: PC-DOS/MS-DOS
/ SOFTWARE: PatentIn Release #1.0, Version #1.30
/ CURRENT APPLICATION DATA:
/ APPLICATION NUMBER: US/08/626,288
/ FILING DATE: No. 6649392 yet assigned
/ CLASSIFICATION: 530
/ ATTORNEY/AGENT INFORMATION:
/ NAME: Ran, David B.
/ REGISTRATION NUMBER: 38,589
/ REFERENCE/DOCKET NUMBER: 15280-267
/ TELECOMMUNICATION INFORMATION:
/ TELEPHONE: (415) 543-9600
/ TELEFAX: (415) 543-5043
/ INFORMATION FOR SEQ ID NO: 2:
/ SEQUENCE CHARACTERISTICS:
/ LENGTH: 104 amino acids
/ TYPE: amino acid
/ STRANDEDNESS:
/ TOPOLOGY: linear
/ MOLECULE TYPE: protein
/ FEATURE:
/ NAME/KEY: Modified-site
/ LOCATION: 1
/ OTHER INFORMATION: /product= "OTHER"
/ OTHER INFORMATION: /note= "Xaa = pyroglutamic acid
/ OTHER INFORMATION: (2-pyrrolidone-5-carboxylic acid or
/ OTHER INFORMATION: 5-oxo-2-pyrrolidinecarboxylic acid)"
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GenCore version 5.1.6
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OM protein - protein search, using sw model

Run on: May 7, 2004, 21:29:40 ; Search time 33.3695 Seconds
(without alignments)

865.070 Million cell updates/sec

Title: US-09-961-400-4

Perfect score: 579

Sequence: 1 QDWLTFQKKHLNTRDVCN.....TFCVTCENQAPVHFVGVC 104

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 1140673 seqs, 277566755 residues

Total number of hits satisfying chosen parameters: 1140673

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database : Published Applications AA:*

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3: /cgn2_6/ptodata/2/pubpaa/US05_NEW_PUB.pep.*
4: /cgn2_6/ptodata/2/pubpaa/US06_PUBCOMB.pep.*
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18: /cgn2_6/ptodata/2/pubpaa/US60_PUBCOMB.pep.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match %	Length	DB ID	Description
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2	579	100.0	104	10	US-09-961-400-4
3	575	99.3	105	10	US-09-961-400-8
4	571	98.6	111	10	US-09-961-400-9
5	570	98.4	105	10	US-09-948-391A-8
6	570	98.4	111	10	US-09-948-391A-9
7	569	98.3	104	10	US-09-961-400-2
8	569	98.3	105	10	US-09-948-391A-6
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10	569	98.3	127	10	US-09-948-391A-28
11	569	98.3	127	10	US-09-961-400-28
12	564	97.4	104	10	US-09-948-391A-11
13	564	97.4	104	10	US-09-961-400-11
14	564	97.4	105	10	US-09-948-391A-13
15	564	97.4	105	10	US-09-961-400-13

16	560	96.7	104	10	US-09-948-391A-2	Sequence 2, Appli
17	547	94.5	105	14	US-10-153-882-2	Sequence 2, Appli
18	542	93.6	104	9	US-09-986-119-1	Sequence 1, Appli
19	542	93.6	104	10	US-09-918-887-1	Sequence 1, Appli
20	539	93.1	104	12	US-10-461-713-53	Sequence 53, Appli
21	436	75.3	83	9	US-09-986-119-3	Sequence 3, Appli
22	436	75.3	83	10	US-09-918-887-3	Sequence 3, Appli
23	276.5	47.8	110	10	US-09-961-400-19	Sequence 19, Appli
24	276.5	47.8	111	10	US-09-948-391A-21	Sequence 21, Appli
25	276.5	47.8	111	10	US-09-961-400-21	Sequence 21, Appli
26	276.5	47.8	117	10	US-09-948-391A-22	Sequence 22, Appli
27	276.5	47.8	117	10	US-09-961-400-22	Sequence 22, Appli
28	275.5	47.6	110	10	US-09-948-391A-15	Sequence 15, Appli
29	275.5	47.6	111	10	US-09-961-400-15	Sequence 15, Appli
30	275.5	47.6	111	10	US-09-961-400-17	Sequence 17, Appli
31	270.5	46.7	110	10	US-09-948-391A-19	Sequence 19, Appli
32	270.5	46.7	110	10	US-09-948-391A-24	Sequence 24, Appli
33	270.5	46.7	110	10	US-09-961-400-24	Sequence 24, Appli
34	270.5	46.7	111	10	US-09-948-391A-26	Sequence 26, Appli
35	270.5	46.7	111	10	US-09-961-400-26	Sequence 26, Appli
36	269.5	46.5	111	10	US-09-948-391A-17	Sequence 17, Appli
37	153.5	26.5	169	13	US-10-016-447-2	Sequence 2, Appli
38	142	24.5	119	12	US-10-016-248-89	Sequence 89, Appli
39	142	24.5	119	15	US-10-074-978A-139	Sequence 139, App
40	120.5	20.8	124	13	US-10-016-447-5	Sequence 5, Appli
41	116	20.0	124	12	US-10-037-417-103	Sequence 103, App
42	108	18.7	124	9	US-09-981-286A-8	Sequence 8, Appli
43	108	18.7	124	12	US-10-461-713-50	Sequence 50, Appli
44	106	18.3	147	9	US-09-286-240-6	Sequence 6, Appli
45	106	18.3	147	9	US-09-863-777-2	Sequence 2, Appli

ALIGNMENTS

RESULT 1

US-09-948-391A-4
; Sequence 4, Application US/09948391A
; Publication No. US20030027311A1
; GENERAL INFORMATION:
; APPLICANT: Rybak, Susanna M.
; APPLICANT: Newton, Dianne L.
; APPLICANT: The United States of America
; APPLICANT: as represented by The Secretary of the
; APPLICANT: Department of Health and Human Services
; TITLE OF INVENTION: Recombinant Anti-Tumor RNase
; FILE REFERENCE: 015280-343110US
; CURRENT APPLICATION NUMBER: US/09/948,391A
; CURRENT FILING DATE: 2002-05-10
; PRIOR APPLICATION NUMBER: US 60/079,751
; PRIOR FILING DATE: 1998-03-27
; PRIOR APPLICATION NUMBER: WO PCT/US99/06641
; PRIOR FILING DATE: 1999-03-26
; PRIOR APPLICATION NUMBER: US 09/622,613
; PRIOR FILING DATE: 2000-08-17
; NUMBER OF SEQ ID NOS: 43
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 4
; TYPE: PRT
; LENGTH: 104
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence:Rana pipiens
; OTHER INFORMATION: ribonuclease with Met23Leu substitution
; OTHER INFORMATION: (recombinant RapLRI Met23Leu)
US-09-948-391A-4

Query Match 100.0%; Score 579; DB 10; Length 104;
Best Local Similarity 100.0%; Pred. No. 1.4e-59;
Matches 104; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY

1 QDWLTFQKKHLNTRDVCNIIILSTNLNLFCKDKNTFIYSRPFVKAIKGIASKNVLT 60
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Db 1 QDWLTFQKKHLNTRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 60
QY 61 FEFYLSDCNVTSRPCYKYLKKSNTFCVTCENQAPVHFVGVGHC 104
Db 61 FEFYLSDCNVTSRPCYKYLKKSNTFCVTCENQAPVHFVGVGHC 104

RESULT 2

US-09-961-400-4
; Sequence 4, Application US/09961400
; Publication No. US20030124131A1
; GENERAL INFORMATION:
; APPLICANT: RYBAK, SUSANNA M.
; APPLICANT: GOLDENBERG, DAVID M.
; TITLE OF INVENTION: IMMUNOCONJUGATES OF TOXINS DIRECTED AGAINST MALIGNANT
; TITLE OF INVENTION: CELLS
; FILE REFERENCE: 018733/1059
; CURRENT APPLICATION NUMBER: US/09/961,400
; CURRENT FILING DATE: 2001-09-25
; PRIOR APPLICATION NUMBER: 09/622,613
; PRIOR FILING DATE: 2000-08-17
; PRIOR APPLICATION NUMBER: PCT/US99/06641
; PRIOR FILING DATE: 1999-03-26
; PRIOR APPLICATION NUMBER: 60/079,751
; PRIOR FILING DATE: 1998-03-26
; NUMBER OF SEQ ID NOS: 43
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 4
; LENGTH: 104
; TYPE: PRT
; ORGANISM: Rana pipiens
US-09-961-400-4

Query Match 100.0%; Score 579; DB 10; Length 104;
Best Local Similarity 100.0%; Pred. No. 1.4e-59;
Matches 104; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QDWLTFQKKHLNTRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 60
Db 1 QDWLTFQKKHLNTRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 60
QY 61 FEFYLSDCNVTSRPCYKYLKKSNTFCVTCENQAPVHFVGVGHC 104
Db 61 FEFYLSDCNVTSRPCYKYLKKSNTFCVTCENQAPVHFVGVGHC 104

RESULT 3

US-09-961-400-8
; Sequence 8, Application US/09961400
; Publication No. US20030124131A1
; GENERAL INFORMATION:
; APPLICANT: RYBAK, SUSANNA M.
; APPLICANT: GOLDENBERG, DAVID M.
; TITLE OF INVENTION: IMMUNOCONJUGATES OF TOXINS DIRECTED AGAINST MALIGNANT
; TITLE OF INVENTION: CELLS
; FILE REFERENCE: 018733/1059
; CURRENT APPLICATION NUMBER: US/09/961,400
; CURRENT FILING DATE: 2001-09-25
; PRIOR APPLICATION NUMBER: 09/622,613
; PRIOR FILING DATE: 2000-08-17
; PRIOR APPLICATION NUMBER: PCT/US99/06641
; PRIOR FILING DATE: 1999-03-26
; PRIOR APPLICATION NUMBER: 60/079,751
; PRIOR FILING DATE: 1998-03-26
; NUMBER OF SEQ ID NOS: 43
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 8
; LENGTH: 105
; TYPE: PRT
; ORGANISM: Rana pipiens
US-09-961-400-8

Query Match 99.3%; Score 575; DB 10; Length 105;
Best Local Similarity 99.0%; Pred. No. 4.2e-59;
Matches 103; Conservative 0; Mismatches 1; Indels 0; Gaps 0;
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Db 2 QDWLTFQKKHLNTRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 61
QY 61 FEFYLSDCNVTSRPCYKYLKKSNTFCVTCENQAPVHFVGVGHC 104
Db 62 FEFYLSDCNVTSRPCYKYLKKSNTFCVTCENQAPVHFVGVGHC 105

RESULT 4

US-09-961-400-9
; Sequence 9, Application US/09961400
; Publication No. US20030124131A1
; GENERAL INFORMATION:
; APPLICANT: RYBAK, SUSANNA M.
; APPLICANT: GOLDENBERG, DAVID M.
; APPLICANT: NEWTON, DIANNE L.
; TITLE OF INVENTION: IMMUNOCONJUGATES OF TOXINS DIRECTED AGAINST MALIGNANT
; TITLE OF INVENTION: CELLS
; FILE REFERENCE: 018733/1059
; CURRENT APPLICATION NUMBER: US/09/961,400
; CURRENT FILING DATE: 2001-09-25
; PRIOR APPLICATION NUMBER: 09/622,613
; PRIOR FILING DATE: 2000-08-17
; PRIOR APPLICATION NUMBER: PCT/US99/06641
; PRIOR FILING DATE: 1999-03-26
; PRIOR APPLICATION NUMBER: 60/079,751
; PRIOR FILING DATE: 1998-03-26
; NUMBER OF SEQ ID NOS: 43
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 9
; LENGTH: 111
; TYPE: PRT
; ORGANISM: Rana pipiens
US-09-961-400-9

Query Match 98.6%; Score 571; DB 10; Length 111;
Best Local Similarity 99.0%; Pred. No. 1.3e-58;
Matches 103; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

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Db 8 QDWLTFQKKHLNTRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 67
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Db 68 FEFYLSDCNVTSRPCYKYLKKSNTFCVTCENQAPVHFVGVGHC 111

RESULT 5

US-09-948-391A-8
; Sequence 8, Application US/09948391A
; Publication No. US20030027311A1
; GENERAL INFORMATION:
; APPLICANT: Rybak, Susanna M.
; APPLICANT: Newton, Dianne L.
; APPLICANT: The United States of America
; APPLICANT: as represented by The Secretary of the
; APPLICANT: Department of Health and Human Services
; TITLE OF INVENTION: Recombinant Anti-Tumor RNase
; FILE REFERENCE: 015280-343110US
; CURRENT APPLICATION NUMBER: US/09/948,391A
; CURRENT FILING DATE: 2002-05-10
; PRIOR APPLICATION NUMBER: US 60/079,751
; PRIOR FILING DATE: 1998-03-27
; PRIOR APPLICATION NUMBER: WO PCT/US99/06641
; PRIOR FILING DATE: 1999-03-26
; PRIOR APPLICATION NUMBER: US 09/622,613

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; PRIOR FILING DATE: 2000-08-17
; NUMBER OF SEQ ID NOS: 43
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 8
; LENGTH: 105
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence:Rana pipiens
; OTHER INFORMATION: ribonuclease with Met at position 1 and Met241Leu
; OTHER INFORMATION: substitution (recombinant Met(-1) RaPLR1 Met23Leu)
US-09-948-391A-8

Query Match          98.4%; Score 570; DB 10; Length 105;
Best Local Similarity 99.0%; Pred. No. 1.6e-58;
Matches 103; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

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QY 61 FEFYLSDCNVTSRPCKYKLLKKSNTFCVTCENQAPVHFVGVC 104
Db 62 FEFYLSDCNVTSRPCKYKLLKKSNTFCVTCENQAPVHFVGVC 105

RESULT 6
US-09-948-391A-9
; Sequence 9, Application US/09948391A
; Publication No. US20030027311A1
; GENERAL INFORMATION:
; APPLICANT: Rybak, Susanna M.
; APPLICANT: Newton, Dianne L.
; APPLICANT: The United States of America
; APPLICANT: as represented by The Secretary of the
; APPLICANT: Department of Health and Human Services
; TITLE OF INVENTION: Recombinant Anti-Tumor RNase
; FILE REFERENCE: 015280-343110US
; CURRENT APPLICATION NUMBER: US/09/948,391A
; CURRENT FILING DATE: 2002-05-10
; PRIOR APPLICATION NUMBER: US 60/079,751
; PRIOR FILING DATE: 1998-03-27
; PRIOR APPLICATION NUMBER: WO PCT/US99/06641
; PRIOR FILING DATE: 1999-03-26
; PRIOR APPLICATION NUMBER: US 09/622,613
; PRIOR FILING DATE: 2000-08-17
; NUMBER OF SEQ ID NOS: 43
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 9
; LENGTH: 111
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence:Rana pipiens
; OTHER INFORMATION: ribonuclease with (His)6 tag, Met at position 7
; OTHER INFORMATION: and Met30Leu substitution (recombinant Met(-1)
; OTHER INFORMATION: RaPLR1 Met23Leu-(His)6)
US-09-948-391A-9

Query Match          98.4%; Score 570; DB 10; Length 111;
Best Local Similarity 99.0%; Pred. No. 1.7e-58;
Matches 103; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 1 QDWLTFQKKHLNTRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 60
Db 8 QDWLTFQKKHLNTRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 67
QY 61 FEFYLSDCNVTSRPCKYKLLKKSNTFCVTCENQAPVHFVGVC 104
Db 68 FEFYLSDCNVTSRPCKYKLLKKSNTFCVTCENQAPVHFVGVC 111

RESULT 7
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US-09-961-400-2
; Sequence 2, Application US/09961400
; Publication No. US20030124131A1
; GENERAL INFORMATION:
; APPLICANT: RYBAK, SUSANNA M.
; APPLICANT: GOLDENBERG, DAVID M.
; APPLICANT: NEWTON, DIANNE L.
; TITLE OF INVENTION: IMMUNOCONJUGATES OF TOXINS DIRECTED AGAINST MALIGNANT
; FILE REFERENCE: 018733/1059
; CURRENT APPLICATION NUMBER: US/09/961,400
; CURRENT FILING DATE: 2001-09-25
; PRIOR APPLICATION NUMBER: 09/622,613
; PRIOR FILING DATE: 2000-08-17
; PRIOR APPLICATION NUMBER: PCT/US99/06641
; PRIOR FILING DATE: 1999-03-26
; PRIOR APPLICATION NUMBER: 60/079,751
; PRIOR FILING DATE: 1998-03-26
; NUMBER OF SEQ ID NOS: 43
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 2
; LENGTH: 104
; TYPE: PRT
; ORGANISM: Rana pipiens
US-09-961-400-2
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```
Query Match          98.3%; Score 569; DB 10; Length 104;
Best Local Similarity 98.1%; Pred. No. 2.1e-58;
Matches 102; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 QDWLTFQKKHLNTRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 60
Db 1 QDWLTFQKKHLNTRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 60
QY 61 FEFYLSDCNVTSRPCKYKLLKKSNTFCVTCENQAPVHFVGVC 104
Db 61 FEFYLSDCNVTSRPCKYKLLKKSNTFCVTCENQAPVHFVGVC 104
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RESULT 8
US-09-948-391A-6
; Sequence 6, Application US/09948391A
; Publication No. US20030027311A1
; GENERAL INFORMATION:
; APPLICANT: Rybak, Susanna M.
; APPLICANT: Newton, Dianne L.
; APPLICANT: The United States of America
; APPLICANT: as represented by The Secretary of the
; APPLICANT: Department of Health and Human Services
; TITLE OF INVENTION: Recombinant Anti-Tumor RNase
; FILE REFERENCE: 015280-343110US
; CURRENT APPLICATION NUMBER: US/09/948,391A
; CURRENT FILING DATE: 2002-05-10
; PRIOR APPLICATION NUMBER: US 60/079,751
; PRIOR FILING DATE: 1998-03-27
; PRIOR APPLICATION NUMBER: WO PCT/US99/06641
; PRIOR FILING DATE: 1999-03-26
; PRIOR APPLICATION NUMBER: US 09/622,613
; PRIOR FILING DATE: 2000-08-17
; NUMBER OF SEQ ID NOS: 43
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 6
; LENGTH: 105
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence:Rana pipiens
; OTHER INFORMATION: ribonuclease with Met at position 1 (recombinant
; OTHER INFORMATION: Met(-1) RaPLR1)
US-09-948-391A-6

Query Match          98.3%; Score 569; DB 10; Length 105;
Best Local Similarity 98.1%; Pred. No. 2.1e-58;
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```
Matches 102; Conservative 1; Mismatches 1; Indels 0; Gaps 0;
QY 1 QDWLTFQKKHLNTRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 60
Db 2 QDWLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 61
QY 61 FEFYLSDCNVTSRPCKYKLLKKSNTFCVTCENQAPVHFVGVGHC 104
Db 62 SEFYLSDCNVTSRPCKYKLLKKSNTFCVTCENQAPVHFVGVGHC 105

RESULT 9
US-09-961-400-6
; Sequence 6, Application US/09961400
; Publication No. US20030124131A1
; GENERAL INFORMATION:
; APPLICANT: RYBAK, SUSANNA M.
; APPLICANT: GOLDENBERG, DAVID M.
; APPLICANT: NEWTON, DIANNE L.
; TITLE OF INVENTION: IMMUNOCONJUGATES OF TOXINS DIRECTED AGAINST MALIGNANT
; TITLE OF INVENTION: CELLS
; FILE REFERENCE: 018733/1059
; CURRENT APPLICATION NUMBER: US/09/961,400
; CURRENT FILING DATE: 2001-09-25
; PRIOR FILING DATE: 09/622,613
; PRIOR FILING DATE: 2000-08-17
; PRIOR APPLICATION NUMBER: PCT/US99/06641
; PRIOR FILING DATE: 1999-03-26
; PRIOR APPLICATION NUMBER: 60/079,751
; PRIOR FILING DATE: 1998-03-26
; NUMBER OF SEQ ID NOS: 43
; SOFTWARE: Patent In Ver. 2.1
; SEQ ID NO 6
; LENGTH: 105
; TYPE: PRT
; ORGANISM: Rana pipiens
US-09-961-400-6

Query Match 98.3%; Score 569; DB 10; Length 105;
Best Local Similarity 98.1%; Pred. No. 2.1e-58;
Matches 102; Conservative 1; Mismatches 1; Indels 0; Gaps 0;
QY 1 QDWLTFQKKHLNTRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 60
Db 2 QDWLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 61
QY 61 FEFYLSDCNVTSRPCKYKLLKKSNTFCVTCENQAPVHFVGVGHC 104
Db 62 SEFYLSDCNVTSRPCKYKLLKKSNTFCVTCENQAPVHFVGVGHC 105

RESULT 10
US-09-948-391A-28
; Sequence 28, Application US/09948391A
; Publication No. US20030027311A1
; GENERAL INFORMATION:
; APPLICANT: Rybak, Susanna M.
; APPLICANT: Newton, Dianne L.
; APPLICANT: The United States of America
; APPLICANT: as represented by The Secretary of the
; APPLICANT: Department of Health and Human Services
; TITLE OF INVENTION: Recombinant Anti-Tumor RNase
; FILE REFERENCE: 015280-343110US
; CURRENT APPLICATION NUMBER: US/09/948,391A
; CURRENT FILING DATE: 2002-05-10
; PRIOR FILING DATE: 1999-03-27
; PRIOR APPLICATION NUMBER: US 60/079,751
; PRIOR FILING DATE: 1998-03-26
; PRIOR APPLICATION NUMBER: WO PCT/US99/06641
; PRIOR FILING DATE: 1999-03-26
; PRIOR APPLICATION NUMBER: US 60/622,613
; PRIOR FILING DATE: 2000-08-17
; NUMBER OF SEQ ID NOS: 43
; SOFTWARE: Patent In Ver. 2.0
; TITLE OF INVENTION: Recombinant Anti-Tumor RNase
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```
; SEQ ID NO 28
; LENGTH: 127
; TYPE: PRT
; ORGANISM: Rana pipiens
; FEATURE:
; OTHER INFORMATION: Rana pipiens ribonuclease (RaplR1) Clone 5a1b cDNA
; OTHER INFORMATION: insert
US-09-948-391A-28

Query Match 98.3%; Score 569; DB 10; Length 127;
Best Local Similarity 98.1%; Pred. No. 2.7e-58;
Matches 102; Conservative 1; Mismatches 1; Indels 0; Gaps 0;
QY 1 QDWLTFQKKHLNTRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 60
Db 24 QDWLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 83
QY 61 FEFYLSDCNVTSRPCKYKLLKKSNTFCVTCENQAPVHFVGVGHC 104
Db 84 SEFYLSDCNVTSRPCKYKLLKKSNTFCVTCENQAPVHFVGVGHC 127

RESULT 11
US-09-961-400-28
; Sequence 28, Application US/09961400
; Publication No. US20030124131A1
; GENERAL INFORMATION:
; APPLICANT: RYBAK, SUSANNA M.
; APPLICANT: GOLDENBERG, DAVID M.
; APPLICANT: NEWTON, DIANNE L.
; TITLE OF INVENTION: IMMUNOCONJUGATES OF TOXINS DIRECTED AGAINST MALIGNANT
; TITLE OF INVENTION: CELLS
; FILE REFERENCE: 018733/1059
; CURRENT APPLICATION NUMBER: US/09/961,400
; CURRENT FILING DATE: 2001-09-25
; PRIOR FILING DATE: 09/622,613
; PRIOR FILING DATE: 2000-08-17
; PRIOR APPLICATION NUMBER: PCT/US99/06641
; PRIOR FILING DATE: 1999-03-26
; PRIOR APPLICATION NUMBER: 60/079,751
; PRIOR FILING DATE: 1998-03-26
; NUMBER OF SEQ ID NOS: 43
; SOFTWARE: Patent In Ver. 2.1
; SEQ ID NO 28
; LENGTH: 127
; TYPE: PRT
; ORGANISM: Rana pipiens
US-09-961-400-28

Query Match 98.3%; Score 569; DB 10; Length 127;
Best Local Similarity 98.1%; Pred. No. 2.7e-58;
Matches 102; Conservative 1; Mismatches 1; Indels 0; Gaps 0;
QY 1 QDWLTFQKKHLNTRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 60
Db 24 QDWLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 83
QY 61 FEFYLSDCNVTSRPCKYKLLKKSNTFCVTCENQAPVHFVGVGHC 104
Db 84 SEFYLSDCNVTSRPCKYKLLKKSNTFCVTCENQAPVHFVGVGHC 127

RESULT 12
US-09-948-391A-11
; Sequence 11, Application US/09948391A
; Publication No. US20030027311A1
; GENERAL INFORMATION:
; APPLICANT: Rybak, Susanna M.
; APPLICANT: Newton, Dianne L.
; APPLICANT: The United States of America
; APPLICANT: as represented by The Secretary of the
; APPLICANT: Department of Health and Human Services
; TITLE OF INVENTION: Recombinant Anti-Tumor RNase
```

```

; FILE REFERENCE: 015280-343110US
; CURRENT APPLICATION NUMBER: US/09/948,391A
; CURRENT FILING DATE: 2002-05-10
; PRIOR FILING DATE: 1998-03-27
; PRIOR FILING DATE: 1998-03-27
; PRIOR APPLICATION NUMBER: WO PCT/US99/06641
; PRIOR FILING DATE: 1999-03-26
; PRIOR APPLICATION NUMBER: US 09/622,613
; PRIOR FILING DATE: 2000-08-17
; NUMBER OF SEQ ID NOS: 43
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 11
; LENGTH: 104
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence:Rana pipiens
; OTHER INFORMATION: ribonuclease with GlnSer substitution
; OTHER INFORMATION: (recombinant RaPLR1 Q1S)
US-09-948-391A-11

Query Match          97.4%; Score 564; DB 10; Length 104;
Best Local Similarity 98.1%; Pred. No. 8e-58;
Matches 101; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 2 DMLTFQKHLTNTRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTTF 61
   |||||
Db 2 DMLTFQKHLTNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTTS 61

QY 62 EFYLSDCNVTSPCKYKLLKXSTNTFCVTCENQAPVHFVGVGHC 104
   |||||
Db 62 EFYLSDCNVTSPCKYKLLKXSTNTFCVTCENQAPVHFVGVGHC 104

RESULT 13
US-09-961-400-11
; Sequence 11, Application US/09961400
; Publication No. US20030124131A1
; GENERAL INFORMATION:
; APPLICANT: RYBAK, SUSANNA M.
; APPLICANT: GOLDENBERG, DAVID M.
; APPLICANT: NEWTON, DIANNE L.
; TITLE OF INVENTION: IMMUNOCONJUGATES OF TOXINS DIRECTED AGAINST MALIGNANT
; FILE REFERENCE: 018733/1059
; CURRENT APPLICATION NUMBER: US/09/961,400
; PRIOR FILING DATE: 2001-09-25
; PRIOR APPLICATION NUMBER: PCT/US99/06641
; PRIOR FILING DATE: 1999-03-26
; PRIOR APPLICATION NUMBER: 60/079,751
; PRIOR FILING DATE: 1998-03-26
; NUMBER OF SEQ ID NOS: 43
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 11
; LENGTH: 104
; TYPE: PRT
; ORGANISM: Rana pipiens
US-09-961-400-11

Query Match          97.4%; Score 564; DB 10; Length 104;
Best Local Similarity 98.4%; Pred. No. 8e-58;
Matches 101; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 2 DMLTFQKHLTNTRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTTF 61
   |||||
Db 2 DMLTFQKHLTNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTTS 61

QY 62 EFYLSDCNVTSPCKYKLLKXSTNTFCVTCENQAPVHFVGVGHC 104
   |||||
Db 62 EFYLSDCNVTSPCKYKLLKXSTNTFCVTCENQAPVHFVGVGHC 104
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RESULT 14
US-09-948-391A-13
; Sequence 13, Application US/09948391A
; Publication No. US20030027311A1
; GENERAL INFORMATION:
; APPLICANT: RYBAK, SUSANNA M.
; APPLICANT: Newton, Dianne L.
; APPLICANT: The United States of America
; APPLICANT: as represented by The Secretary of the
; APPLICANT: Department of Health and Human Services
; TITLE OF INVENTION: Recombinant Anti-Tumor RNase
; FILE REFERENCE: 015280-343110US
; CURRENT APPLICATION NUMBER: US/09/948,391A
; CURRENT FILING DATE: 2002-05-10
; PRIOR APPLICATION NUMBER: US 60/079,751
; PRIOR FILING DATE: 1998-03-27
; PRIOR APPLICATION NUMBER: WO PCT/US99/06641
; PRIOR FILING DATE: 1999-03-26
; PRIOR APPLICATION NUMBER: US 09/622,613
; PRIOR FILING DATE: 2000-08-17
; NUMBER OF SEQ ID NOS: 43
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 13
; LENGTH: 105
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence:Rana pipiens
; OTHER INFORMATION: ribonuclease with Met at position 1 and GlnSer
; OTHER INFORMATION: substitution (recombinant Met(-1) RaPLR1 Q1S)
US-09-948-391A-13

Query Match          97.4%; Score 564; DB 10; Length 105;
Best Local Similarity 98.1%; Pred. No. 8.1e-58;
Matches 101; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 2 DMLTFQKHLTNTRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTTF 61
   |||||
Db 3 DMLTFQKHLTNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTTS 62

QY 62 EFYLSDCNVTSPCKYKLLKXSTNTFCVTCENQAPVHFVGVGHC 104
   |||||
Db 63 EFYLSDCNVTSPCKYKLLKXSTNTFCVTCENQAPVHFVGVGHC 105

RESULT 15
US-09-961-400-13
; Sequence 13, Application US/09961400
; Publication No. US20030124131A1
; GENERAL INFORMATION:
; APPLICANT: RYBAK, SUSANNA M.
; APPLICANT: GOLDENBERG, DAVID M.
; APPLICANT: NEWTON, DIANNE L.
; TITLE OF INVENTION: IMMUNOCONJUGATES OF TOXINS DIRECTED AGAINST MALIGNANT
; FILE REFERENCE: 018733/1059
; CURRENT APPLICATION NUMBER: US/09/961,400
; PRIOR FILING DATE: 2001-09-25
; PRIOR APPLICATION NUMBER: PCT/US99/06641
; PRIOR FILING DATE: 1999-03-26
; PRIOR APPLICATION NUMBER: 60/079,751
; PRIOR FILING DATE: 1998-03-26
; NUMBER OF SEQ ID NOS: 43
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 13
; LENGTH: 105
; TYPE: PRT
; ORGANISM: Rana pipiens
US-09-961-400-13
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Query Match      97.4%; Score 564; DB 10; Length 105;
Best Local Similarity 98.1%; Pred. No. 8.1e-58;
Matches 101; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

Qy  2 DWTFTQKKHLTNTTRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTTF 61
    |||||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:
Db  3 DWTFTQKKHLTNTTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 62
    |||||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:
Qy  62 EFYLSDCNVTSRPCKYKIKKSTNTFCVTCENQAPVHFVGHC 104
    |||||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:
Db  63 EFYLSDCNVTSRPCKYKIKKSTNTFCVTCENQAPVHFVGHC 105
    |||||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:

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Search completed: May 7, 2004, 21:51:56
 Job time : 34.3695 secs

GenCore version 5.1.6
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OM protein - protein search, using sw model

Run on: May 7, 2004, 21:38:36 ; Search time 9.43686 Seconds
(without alignments)
1060.090 Million cell updates/sec

Title: US-09-961-400-4

Perfect score: 579

Sequence: 1 QWLTFQKKHLNTRDVCN.....TFCVTCENQAPVHFVGVGHC 104

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 283366 seqs, 96191526 residues

Total number of hits satisfying chosen parameters: 283366

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database : PIR 78:*

1: Pirl:*

2: pirl2:*

3: pirl3:*

4: pirl4:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	544	94.0	104	2 A39035	ribonuclease-relat
2	283	48.9	111	2 A27121	ribonuclease-relat
3	279.5	48.3	111	1 JX0120	ribonuclease-relat
4	263.5	45.5	111	2 JX0085	pancreatic ribonuc
5	142	24.5	119	2 S41111	pancreatic ribonuc
6	123	21.2	124	1 NRUI	pancreatic ribonuc
7	120	20.7	125	1 A32474	angiogenin [valida
8	118	20.4	128	1 NRGFB	pancreatic ribonuc
9	117	20.2	128	1 NRCU	pancreatic ribonuc
10	116	20.0	124	1 NRWHK	pancreatic ribonuc
11	112.5	19.4	145	1 A35932	angiogenin precurs
12	111	19.2	125	1 NRKS	pancreatic ribonuc
13	110	19.0	128	1 B43825	angiogenin - rabbi
14	110	19.0	128	1 NRY	pancreatic ribonuc
15	108.5	18.7	147	2 I52489	ribonuclease 4 (RC
16	108	18.7	124	1 NRBOB	pancreatic ribonuc
17	108	18.7	124	1 NRCE	pancreatic ribonuc
18	108	18.7	150	1 NRBO	pancreatic ribonuc
19	107	18.5	124	2 S08549	pancreatic ribonuc
20	106	18.3	147	1 NRHUG	angiogenin - pig
21	105	18.1	124	1 NRSH	pancreatic ribonuc
22	105	18.1	124	1 NRPRH	pancreatic ribonuc
23	105	18.1	124	1 NRHP	pancreatic ribonuc
24	105	18.1	124	2 S07141	pancreatic ribonuc
25	104.5	18.0	123	1 A43825	pancreatic ribonuc
26	104	18.0	124	1 NRBN	pancreatic ribonuc
27	104	18.0	124	1 NRWB	pancreatic ribonuc
28	103	17.8	124	1 NRGF	pancreatic ribonuc
29	103	17.8	124	1 NRPG	pancreatic ribonuc

30	103	17.8	128	1 NRPO	pancreatic ribonuc
31	103	17.8	167	2 S20066	pancreatic-type ri
32	102	17.6	128	1 NRHO	pancreatic ribonuc
33	101.5	17.5	155	2 JC6159	eosinophil-associa
34	100	17.3	124	1 NRGPA	pancreatic ribonuc
35	99	17.1	124	1 NRDEO	pancreatic ribonuc
36	99	17.1	124	1 NRDM	pancreatic ribonuc
37	99	17.1	124	1 NRCMM	pancreatic ribonuc
38	99	17.1	124	1 NRCMB	pancreatic ribonuc
39	98.5	17.0	124	2 S08546	pancreatic ribonuc
40	98	16.9	124	1 NRG	pancreatic ribonuc
41	98	16.9	156	2 JC6160	eosinophil-associa
42	97	16.8	124	1 NRANE	pancreatic ribonuc
43	96.5	16.7	119	2 JX0115	pancreatic ribonuc
44	96	16.6	124	1 NRANT	pancreatic ribonuc
45	96	16.6	124	1 NREKN	pancreatic ribonuc

ALIGNMENTS

RESULT 1

A39035

ribonuclease-related anti-tumor protein - northern leopard frog (fragment)

C:Species: Rana pipiens (northern leopard frog)

C:Date: 31-Jul-1991 #sequence_revision 31-Jul-1991 #text_change 30-Jun-1993

C:Accession: A39035

R:Ardelt, W.; Mikulski, S.M.; Shogen, K.

J. Biol. Chem. 266, 245-251, 1991

A:Title: Amino acid sequence of an anti-tumor protein from Rana pipiens oocytes and earl

A:Reference number: A39035; MUID:91093131; PMID:1985896

A:Accession: A39035

A>Status: preliminary

A:Molecule type: protein

A:Residues: 1-104 <ARD>

C:Superfamily: pancreatic ribonuclease

Query Match 94.0%; Score 544; DB 2; Length 104;

Best Local Similarity 93.3%; Pred. No. 1.4e-47;

Matches 97; Conservative 4; Mismatches 3; Indels 0; Gaps 0;

QY 1 QWLTFQKKHLNTRDVCNNTLSNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 60

Db 1 EDWLTFOKKHINTRDVDCDNTMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 60

QY 61 FEFYLSDCNVTSPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 104

Db 61 SEFYLSDCNVTSPCKYKLLKSTNFKCVTCENQAPVHFVGVGSC 104

RESULT 2

A27121

ribonuclease-related sialic acid-binding lectin - bullfrog

C:Species: Rana catesbeiana (bullfrog)

C:Date: 19-Nov-1988 #sequence_revision 19-Nov-1988 #text_change 30-Jun-1993

C:Accession: A27121

R:Titani, K.; Takio, K.; Kuwada, M.; Nitta, K.; Sakakibara, F.; Kawachi, H.; Takayanagi

Biochemistry 26, 2189-2194, 1987

A:Title: Amino acid sequence of sialic acid-binding lectin from frog (Rana catesbeiana)

A:Reference number: A27121; MUID:87299649; PMID:3304421

A:Accession: A27121

A:Molecule type: protein

A:Residues: 1-111 <TIT>

C:Superfamily: pancreatic ribonuclease

C:Keywords: lectin

Query Match 48.9%; Score 283; DB 2; Length 111;

Best Local Similarity 47.7%; Pred. No. 2.2e-21;

Matches 53; Conservative 17; Mismatches 33; Indels 8; Gaps 3;

QY 1 QWLTFQKKHLNTRDVCNNTLSNLF-----HCKDKNTFIYSRPEPVKAICKGIIASKN 56

Db 1 ENWATFOOKHIINTPIINCNTIMDNNTIYGVGQCKRVNTFIISATTVAICTGVI-NNN 59

```

C/Species: Iguana iguana (common iguana)
C/Date: 19-Mar-1997 #sequence_revision 19-Mar-1997 #text_change 21-Aug-1998
C/Accession: S4111
R/Zhao, W.; Beintema, J.J.; Hofsteenge, J.
Eur. J. Biochem. 219, 641-646, 1994
A/Title: The amino acid sequence of iguana (Iguana iguana) pancreatic ribonuclease.
A/Reference number: S4111; MUID:94139745; PMID:8307028
A/Accession: S4111
A/Status: preliminary
A/Molecule type: protein
A/Residues: 1-119 <ZHA>
C/Superfamily: pancreatic ribonuclease

Query Match 24.5%; Score 142; DB 2; Length 119;
Best Local Similarity 29.8%; Pred. No. 3.1e-07;
Matches 34; Conservative 19; Mismatches 45; Indels 16; Gaps 5;

Qy 1 QDWLTPQKKHL-----TNTRDVDCNNIL---STNLFHCKDKNTFIYSRPEPVKAIC--K 49
      ||| ||| : : : : : : : : : : : : : : : : : : : : : : : : : :
Db 1 QDWSSFQNKHIDYPETASNPAYCDLMMQRRLNPTKCKTENTFVHASPEIQVCGSG 60
      ||| ||| : : : : : : : : : : : : : : : : : : : : : : : : : :

Qy 50 GIIAKSNVLTTFE-FYLSDC-----NVTGRPKYKLLKSTNFCVTCENQAPVHF 98
      ||| ||| : : : : : : : : : : : : : : : : : : : : : : : : : :
Db 61 GTHYEDNLYDSNESFDLTDCKNVGTSAPSSCKYNGTGTGKIRIACENNPVHF 114
      ||| ||| : : : : : : : : : : : : : : : : : : : : : : : : : :

RESULT 6
NRUI
pancreatic ribonuclease (EC 3.1.27.5) - cuis
N/Alternate names: RNase 1; RNase A
C/Species: Galea musteloides (cuis)
C/Date: 03-Aug-1984 #sequence_revision 03-Aug-1984 #text_change 04-Oct-1996
C/Accession: A00827
R/Beintema, J.J.; Neuteboom, B.
J. Mol. Evol. 19, 145-152, 1983
A/Title: Origin of the duplicated ribonuclease gene in guinea-pig: comparison of the
A/Reference number: A92957; MUID:87036770; PMID:6571219
A/Accession: A00827
A/Molecule type: protein
A/Residues: 1-124 <BEI>
A/Note: about one-third of the molecules lacked Ala-1
C/Comment: The cuis is a rodent belonging to the same subfamily as the guinea pig.
C/Superfamily: pancreatic ribonuclease
C/Keywords: glycoprotein; hydrolase; nucleic acid digestion; pancreas
F/12,41,119/Active site: His, Lys, His #status predicted
F/26-84,40-95,58-110,65-72/Disulfide bonds: #status predicted
F/94/Binding site: carbohydrate (Asn) (covalent) #status absent

Query Match 21.2%; Score 123; DB 1; Length 124;
Best Local Similarity 28.2%; Pred. No. 2.6e-05;
Matches 33; Conservative 21; Mismatches 39; Indels 24; Gaps 7;

Qy 4 LTFQKKHL-----TNTRDVDCNNIL---STNLFHCKDKNTFIYSRPEPVKAIC--KGI 51
      ||| ||| : : : : : : : : : : : : : : : : : : : : : : : : : :
Db 6 MKEFQRHSDSGHPDNTN--YCNEWVVRSMSTQGRCKPVNTFVHEPLEAVQVCSQKNV 63
      ||| ||| : : : : : : : : : : : : : : : : : : : : : : : : : :

Qy 52 IASKNVLTTFEYF---LSDCNVTSRP---CKYKLLKSTNFCVTCEN--QAPVHF 98
      ||| ||| : : : : : : : : : : : : : : : : : : : : : : : : : :
Db 64 PCKNGGTNCYQSHSMRIIDCRVTSSTKYPNGSYRMTQAKSIIIVACEGTPSPVHF 120
      ||| ||| : : : : : : : : : : : : : : : : : : : : : : : : : :

RESULT 7
A32474
angiogenin [validated] - bovine
N/Alternate names: angiogenesis factor
N/Contains: ribonuclease (EC 3.1.27.-)
C/Species: Bos primigenius taurus (cattle)
C/Date: 26-Sep-1989 #sequence_revision 25-Sep-1989 #text_change 15-Sep-2000
C/Accession: A32474; S02001; A30044; S48212
R/Bond, M.D.; Strýdom, D.J.
Biochemistry 28, 6110-6113, 1989
A/Title: Amino acid sequence of bovine angiogenin.
A/Reference number: A32474; MUID:89375344; PMID:2775757

```

A:Accession: A32474
A:Molecule type: protein
A:Residues: 1-125 <BON>
A:Experimental source: plasma
R:Maes, P.; Damart, D.; Rommens, C.; Montreuil, J.; Spik, G.; Tartar, A.
FEBS Lett. 241, 41-45, 1988
A:Title: The complete amino acid sequence of bovine milk angiogenin.
A:Reference number: S02001; MUID:89065101; PMID:3197838
A:Accession: S02001
A:Molecule type: protein
A:Residues: 1-125 <MAE>
A:Experimental source: milk
R:Acharya, K.R.; Shapiro, R.; Riordan, J.F.; Vallee, B.L.
submitted to the Brookhaven Protein Data Bank, January 1995
A:Reference number: A65065; PDB:1AGI
A:Contents: annotation; X-ray crystallography, 1.5 angstroms, residues 1-125
R:Acharya, K.R.; Shapiro, R.; Riordan, J.F.; Vallee, B.L.
Proc. Natl. Acad. Sci. U.S.A. 92, 2949-2953, 1995
A:Title: Crystal structure of bovine angiogenin at 1.5 Angstroms resolution.
A:Reference number: A58315; MUID:9524057; PMID:7708754
A:Contents: annotation; X-ray crystallography, 1.5 angstroms
R:Lequin, O.; Albarat, C.; Bontems, F.; Spik, G.; Lallemand, J.Y.
submitted to the Brookhaven Protein Data Bank, April 1996
A:Reference number: A65709; PDB:1G10
A:Contents: annotation; conformation by (1)H-NMR, residues 1-125
R:Lequin, O.; Albarat, C.; Bontems, F.; Spik, G.; Lallemand, J.Y.
Biochemistry 35, 8870-8880, 1996
A:Title: Solution structure of bovine angiogenin by (1)H nuclear magnetic resonance spectroscopy
A:Reference number: A58821; MUID:96280645; PMID:8688423
A:Contents: annotation; conformation by (1)H-NMR
R:Reisdorf, C.; Abergel, D.; Bontems, F.; Lallemand, J.Y.; Decottignies, J.P.; Spik, G.
Eur. J. Biochem. 224, 811-822, 1994
A:Title: Proton resonance assignments and secondary structure of bovine angiogenin.
A:Reference number: S48212; MUID:95010071; PMID:7925406
A:Contents: annotation; conformation by (1)H-NMR
C:Function:
A:Description: hydrolyzes tRNA; induces vascularization of normal and malignant tissues
C:Superfamily: pancreatic ribonuclease
C:Keywords: angiogenesis; hydrolase; nucleic acid degradation
F:60-68/Region: receptor binding #status predicted
F:14,41,115/Active site: His, Lys, His #status predicted
F:27-82,40-93,58-108/Disulfide bonds: #status experimental

Query Match 20.7%; Score 120; DB 1; Length 125;
Best Local Similarity 32.7%; Pred. No. 5.3e-05;
Matches 32; Conservative 14; Mismatches 32; Indels 20; Gaps 5;
QY 16 DVDCCNLLSTNLF--HCKDKNTFIYSRPPVKAICK-----GIATSKNVLTTFEY 64
DB 24 DEYCFNMKNRLTPCKDNTFVHGNKNDIKAI CEDRNGQPYRGDLRISK-----EFQ 78

QY 65 LSDC---NVTSR-PCYKLLKSTNTFCVTCENQAPVHF 98
DB 79 ITICKHKGSSRPPCKRYGATEDSRVIVGCEGLPVHF 116

RESULT 8
NKGPB
pancreatic ribonuclease (EC 3.1.27.5) B - guinea pig (tentative sequence)
N:Alternate names: RNase IB
C:Species: Cavia porcellus (guinea pig)
C:Date: 24-Apr-1984 #sequence_revision 24-Apr-1984 #text_change 31-Mar-2000
C:Accession: A00826
R:van den Berg, A.; van den Hende-Timmer, L.; Hofsteenge, J.; Gaastra, W.; Beintema, J.J.
Eur. J. Biochem. 75, 91-100, 1977
A:Title: Guinea pig pancreatic ribonucleases. Isolation, properties, primary structure
A:Reference number: A91247; MUID:77185023; PMID:862624
A:Accession: A00826
A:Molecule type: protein
A:Residues: 1-128 <VAN>
A:Note: 64-Pro was also found
C:Superfamily: pancreatic ribonuclease
C:Keywords: glycoprotein; hydrolase; nucleic acid digestion; pancreas

F:12,41,119/Active site: His, Lys, His #status predicted
F:21,34/Binding site: carbohydrate (Asn) (covalent) #status experimental
F:26-84,40-95,58-110,65-72/Disulfide bonds: #status predicted

Query Match 20.4%; Score 118; DB 1; Length 128;
Best Local Similarity 25.9%; Pred. No. 8.6e-05;
Matches 30; Conservative 25; Mismatches 39; Indels 22; Gaps 7;
QY 4 LTFQKKHL-----TNTRDVDCNNIL---STNLFHCKDKNTFIYSRPPVKAIC--KGII 52
DB 6 MFKQRMDEPGSPSSSY-CNVMMRRMTQGRCKPVNTFVHESLADVQAVCFQKNVL 64

QY 53 ASKNVLTTFEY----LSDCNVTSRP-----CKYKLLKSTNTFCVTCENQ--APVHF 98
DB 65 CKNGQTCVQSYSRMRITDCRVTSSSKPFNCYSRMSQAKSIIVACEGDPYVPVHF 120

RESULT 9
NRCU
pancreatic ribonuclease (EC 3.1.27.5) - nutria (tentative sequence)
N:Alternate names: RNase 1; RNase A
C:Species: Myocastor coypus (nutria, coypu)
C:Date: 24-Apr-1984 #sequence_revision 30-Sep-1988 #text_change 31-Mar-2000
C:Accession: A00822
R:van den Berg, A.; van den Hende-Timmer, L.; Beintema, J.J.
Biochim. Biophys. Acta 453, 400-409, 1976
A:Title: Isolation, properties and primary structure of coypu and chinchilla pancreatic
A:Reference number: A90612; MUID:77065676; PMID:999896
A:Accession: A00822
A:Molecule type: protein
A:Residues: 1-128 <VAN>
C:Superfamily: pancreatic ribonuclease
C:Keywords: glycoprotein; hydrolase; nucleic acid digestion; pancreas
F:12,41,119/Active site: His, Lys, His #status predicted
F:26-84,40-95,58-110,65-72/Disulfide bonds: #status predicted
F:34/Binding site: carbohydrate (Asn) (covalent) #status experimental

Query Match 20.2%; Score 117; DB 1; Length 128;
Best Local Similarity 28.2%; Pred. No. 0.00011;
Matches 33; Conservative 19; Mismatches 37; Indels 28; Gaps 7;
QY 6 FQKKHL-----TNTRDVDCNNIL--STNLF--HCKDKNTFIYSRPPVKAICKGIATSKNV 57
DB 8 FERQHMDSRGSPSTNPNYCNEMMKSRMTQGRCKPVNTFVHESLADVQAVC----FQKNV 63

QY 58 L-----TTFEYLSDCNVTSRP-----CKYKLLKSTNTFCVTCENQ--APVHF 98
DB 64 LCKNGQTCVQSYSNMHHITDCRVTSNSDYPNCSYRTSQEKSIVVACEGPNYPVPHF 120

RESULT 10
NRWHK
pancreatic ribonuclease (EC 3.1.27.5) - minke whale
N:Alternate names: RNase 1; RNase A
C:Species: Balaeoptera acutorostrata (minke whale, lesser rorqual)
C:Date: 24-Apr-1984 #sequence_revision 24-Apr-1984 #text_change 03-Jun-1994
C:Accession: A00818
R:Emmens, M.; Welling, G.W.; Beintema, J.J.
Biochem. J. 157, 317-323, 1976
A:Title: The amino acid sequence of pike whale (lesser rorqual) pancreatic ribonuclease.
A:Reference number: A00818; MUID:76277855; PMID:962870
A:Accession: A00818
A:Molecule type: protein
A:Residues: 1-124 <EMM>
C:Superfamily: pancreatic ribonuclease
C:Keywords: glycoprotein; hydrolase; nucleic acid digestion; pancreas
F:12,41,119/Active site: His, Lys, His #status predicted
F:26-84,40-95,58-110,65-72/Disulfide bonds: #status predicted
F:76/Binding site: carbohydrate (Asn) (covalent) (partial) #status experimental

Query Match 20.0%; Score 116; DB 1; Length 124;
Best Local Similarity 26.9%; Pred. No. 0.00013;
Matches 32; Conservative 16; Mismatches 43; Indels 28; Gaps 6;

[illegible]

RESULT 13

QY 82 STNFCVTCENQAPVHF 98
:
DP 99 GSRNIVACENGLPVHF 115
:

RESULT 14

QY 54 SKNVLTTFEFY----LSDCNVTSR----PCKYKLKKSTNTFCVTCENQ--APVHF 98

Db 66 KNGQTNQYQSYSSWHITDCRVTNSKFPDCSYRTQAKSIIVVACGNLYVPVHF 120

RESULT 15

I52489
ribonuclease 4 (EC 3.1.1.-) precursor - human
N:Alternate names: RNase 4
C:Species: Homo sapiens (man)
C>Date: 02-Jul-1996 #sequence_revision 02-Jul-1996 #text_change 22-Jun-1999
C:Accession: I52489; S60163; S38272
R:Seno, M.; Futami, J.; Tsushima, Y.; Akutagawa, K.; Kosaka, M.; Tada, H.; Yamada, H.
Biochim. Biophys. Acta 1261, 424-426, 1995
A:Title: Molecular cloning and expression of human ribonuclease 4 cDNA.
A:Reference number: I52489; MUID:95260866; PMID:7742370

A:Accession: I52489
A:Status: preliminary; translated from GB/EMBL/DBJ
A:Molecule type: mRNA
A:Residues: 1-147 <RES>
R:Cross-references: GB:D37931; NID:g976228; PIDN:BAA07150.1; PID:g976229
Nucleic Acids Res. 23, 4290-4295, 1995
A:Title: Human ribonuclease 4 (RNase 4): coding sequence, chromosomal localization and
A:Reference number: S60163; MUID:96091174; PMID:7501448
A:Accession: S60163
A:Status: preliminary
A:Molecule type: DNA
A:Residues: 29-53, 'D', 55-147 <ROS>
A:Cross-references: EMBL:D36775; NID:G1040977; PIDN:AAA96750.1; PID:G1040978
Eur. J. Biochem. 217, 401-410, 1993

A:Title: The amino acid sequence of human ribonuclease 4, a highly conserved ribonuclease
A:Reference number: S38272; MUID:94039064; PMID:8223579
A:Accession: S38272
A:Molecule type: protein
A:Residues: 29-147 <ZHO>

C:Genetics:
A:Gene: GDB:RNASE4
A:Cross-references: GDB:6108046; OMIM:601030
A:Map position: 14q24-q31
A:Introns: #status absent
C:Superfamily: pancreatic ribonuclease
C:Keywords: hydrolase
F:40.68.144/Active site: His, Lys, His #status predicted
F:53-109,67-120,85-135,92-99/Disulfide bonds: #status predicted

Query Match 18.7%; Score 108.5; DB 2; Length 147;
Best Local Similarity 31.2%; Pred. No. 0.00088;
Matches 35; Conservative 16; Mismatches 44; Indels 17; Gaps 7;
QY 6 FQKKHL-----TNRDVCNNIL---STNLFHCKKNTFIYSRPEPVKAICK--GIIASKN 56
Db 36 FLRQHVHPEETGGSDRYCNLMQRRKMTLYHCCKRENTFIHEDIWNIRSICTTNIQCKNG 95
QY 57 VLTTFE--FYLSDCNVT--SRP--CKYKIKKSTNTFCVTCEN--QAPVHFVG 100
Db 96 KMNCHGVVVKYDCTDGTSSRAPNCRKRIALASTRRVVIACGNPQVPVHFDG 147

Search completed: May 7, 2004, 21:54:53
Job time : 9.43686 secs

GenCore version 5.1.6
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OM protein - protein search, using sw model

Run on: May 7, 2004, 21:30:40 ; Search time 5.25351 Seconds
(without alignments)
1030.796 Million cell updates/sec

Title: US-09-961-400-4

Perfect score: 579

Sequence: 1 QDWLTFQKKHLNTRDVCN.....TFCVTCNQAPVHFVGVGHC 104

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 141681 seqs, 52070155 residues

Total number of hits satisfying chosen parameters: 141681

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database : SwissProt_42.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	547	94.5	104	1	RN30_RANPI
2	286	49.4	133	1	RN30_RANCA
3	279.5	48.3	111	1	LEGS_RANCA
4	263.5	45.5	111	1	RNPL_RANCA
5	142	24.5	119	1	RNP_IGUIG
6	124.5	21.5	145	1	ANGR_MOUSE
7	124.5	21.5	145	1	ANGR_MOUSE
8	123	21.2	124	1	ANGI_CERAE
9	120	20.7	148	1	RNP_GALMU
10	118	20.4	128	1	ANGI_BOVIN
11	117	20.2	128	1	RNP_CAVPO
12	116	20.0	124	1	RNP_MYOCO
13	115.5	19.9	146	1	ANGI_MACMU
14	112.5	19.4	145	1	ANGI_MOUSE
15	112.5	19.4	146	1	ANGI_RAPHA
16	111	19.2	128	1	RNP_PROGU
17	110.5	19.1	147	1	RNS4_PANTR
18	110.5	19.1	155	1	ECF4_MOUSE
19	110	19.0	125	1	ANGI_RABIT
20	110	19.0	128	1	RNP_HYDHY
21	110	18.0	146	1	ANGI_MIOTA
22	108.5	18.7	147	1	RNS4_HUMAN
23	108	18.7	124	1	RNP_CHIBR
24	108	18.7	150	1	RNP_BOVIN
25	107	18.5	156	1	ECF3_MOUSE
26	106	18.3	147	1	ANGI_HUMAN
27	106	18.3	147	1	ANGI_PANTR
28	105	18.1	124	1	RNP_AEFME
29	105	18.1	124	1	RNP_ANTAM
30	105	18.1	124	1	RNP_HIPAM
31	105	18.1	124	1	RNP_SHEEP
32	104.5	18.0	123	1	ANGI_PIG
33	104.5	18.0	150	1	RNS6_SAISC

34	104	18.0	124	1	RNP_BUBBU
35	104	18.0	124	1	RNP_CONTA
36	104	18.0	124	1	RNP_GAZTH
37	103	17.8	123	1	ANG2_BOVIN
38	103	17.8	124	1	RNP_GIRCA
39	103	17.8	124	1	RNP_PIG
40	103	17.8	128	1	RNP_HYSCR
41	103	17.8	156	1	RNP_MVOGL
42	103	17.8	167	1	RNR_BOVIN
43	102.5	17.7	119	1	RNS4_BOVIN
44	102	17.6	128	1	RNP_HORSE
45	102	17.6	146	1	ANGI_SAGOE

ALIGNMENTS

RESULT 1
RN30_RANPI
ID RN30_RANPI STANDARD; PRT; 104 AA.
AC P22069;
DT 01-AUG-1991 (Rel. 19, Created)
DT 01-FEB-1994 (Rel. 28, Last sequence update)
DT 28-FEB-2003 (Rel. 41, Last annotation update)
DE P-30 protein (EC 3.1.27.-) (Onconase).
OS Rana pipiens (Northern leopard frog).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Amphibia; Batrachia; Anura; Neobatrachia; Ranoidea; Ranidae; Rana.
OX NCBI_TaxID=8404;
RN [1]
RP SEQUENCE.
RC TISSUE=Embryo;
RX MEDLINE=91093131; PubMed=1985896;
RA Ardelt W., Mikulski S.M., Shogen K.;
RT "Amino acid sequence of an anti-tumor protein from Rana pipiens oocytes and early embryos. Homology to pancreatic ribonucleases.";
RL J. Biol. Chem. 266:245-251(1991).
RN [2]
RP 3D-STRUCTURE MODELING.
RX MEDLINE=93066156; PubMed=1438177;
RA Mosimann S.C., Johns K.L., Ardelt W., Mikulski S.M., Shogen K., James M.N.G.;
RT "Comparative molecular modeling and crystallization of P-30 protein: a novel antitumor protein of Rana pipiens oocytes and early embryos.";
RL Proteins 14:392-400(1992).
RN [3]
RP X-RAY CRYSTALLOGRAPHY (1.7 ANGSTROMS).
RX MEDLINE=94166079; PubMed=8120892;
RA Mosimann S.C., Ardelt W., James M.N.G.;
RT "Refined 1.7 A X-ray crystallographic structure of P-30 protein, an amphibian ribonuclease with anti-tumor activity.";
RL J. Mol. Biol. 236:1141-1153(1994).
CC -!- FUNCTION: Basic protein with antiproliferative/cytotoxic activity against several tumor cell lines in vitro, as well as antitumor in vivo. It exhibits a ribonuclease-like activity against high molecular weight ribosomal RNA.
CC -!- DEVELOPMENTAL STAGE: Early embryos (up to four blastomere stage).
CC -!- SIMILARITY: Belongs to the pancreatic ribonuclease family.
DR PDB; IONC; 31-JAN-94.
DR InterPro; IPR001427; RNaseA.
DR Pfam; PF00074; rnaaseA; 1.
DR ProDom; PD000535; RNaseA; 1.
DR SMART; SM00092; RNase Pc; 1.
DR PROSITE; PS00127; RNASE_PANCREATIC; 1.
KW Hydrolase; Nuclease; Endonuclease; 3D-structure;
KW Pyrolidone carboxylic acid.
FT MOD_RES 1 10 PYRROLIDONE CARBOXYLIC ACID.
FT ACT_SITE 10 10
FT ACT_SITE 31 31
FT ACT_SITE 97 97
FT DISULFID 19 68
FT DISULFID 30 75

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FT DISULFID 48 90
FT DISULFID 87 104
FT HELIX 3 10
FT STRAND 11 12
FT HELIX 19 22
FT HELIX 23 24
FT TURN 26 30
FT TURN 33 38
FT STRAND 41 45
FT HELIX 46 48
FT TURN 49 50
FT STRAND 55 58
FT STRAND 63 70
FT TURN 74 75
FT STRAND 77 84
FT STRAND 86 91
FT TURN 92 93
FT STRAND 94 101
SQ SEQUENCE 104 AA; 11845 MW; 22A753C2F9E566B4 CRC64;

Query Match 34.5%; Score 547; DB 1; Length 104;
Best Local Similarity 94.2%; Pred. No. 5.5e-52;
Matches 98; Conservative 3; Mismatches 0; Indels 0; Gaps 0;

QY 1 QDWLTQKKHLNTRDVCNNILSTNLFHCKQKQNTFYISRPPEVKAICKGIASKNVLTT 60
Db 1 QDWLTQKKHLNTRDVCNNILSTNLFHCKQKQNTFYISRPPEVKAICKGIASKNVLTT 60
QY 61 FFYILSDCNVTRSPCKYKLLKSNTEFCVTCENQAPVHFVGVGHC 104
Db 61 SBFYILSDCNVTRSPCKYKLLKSNTEFCVTCENQAPVHFVGVGSC 104

RESULT 2
RNPO RANCA STANDARD; PRT; 133 AA.
AC P11916; Q9PWR7;
DT 01-OCT-1989 (Rel. 12, Created)
DT 10-OCT-2003 (Rel. 42, Last sequence update)
DT 10-OCT-2003 (Rel. 42, Last annotation update)
DE Ribonuclease, oocytes precursor (EC 3.1.27.-) (RC-RNase) (Sialic acid-
binding lectin) (SBL-C).
GN RCR.
OS Rana catesbeiana (Bull frog).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Amphibia; Batrachia; Anura; Neobatrachia; Ranoidae; Ranidae; Rana.
OK NCBI_TaxID=8400;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=Liver;
RX MEDLINE=98165825; PubMed=9497370;
RA Huang H.C., Wang S.C., Leu Y.J., Lu S.C., Liao Y.D.;
RT "The Rana catesbeiana rcr gene encoding a cytotoxic ribonuclease.
RT Tissue distribution, cloning, purification, cytotoxicity, and active
RT residues for RNase activity.";
RL J. Biol. Chem. 273:6395-6401(1998).
RN [2]
RP SEQUENCE OF 23-133.
RC TISSUE=Egg;
RX MEDLINE=87299649; PubMed=3304421;
RA Titani K., Takio K., Kuwada M., Nitta K., Sakakibara F., Kawauchi H.,
RA Takayanagi G., Hakomori S.;
RT "Amino acid sequence of sialic acid binding lectin from frog (Rana
RT catesbeiana) eggs";
RL Biochemistry 26:2189-2194(1987).
RN [3]
RP CHARACTERIZATION, AND SEQUENCE OF 81-101.
RX MEDLINE=92220613; PubMed=1373237;
RA Liao Y.-D.;
RT "A pyrimidine-guanine sequence-specific ribonuclease from Rana
RT catesbeiana (bullfrog) oocytes.";
RL Nucleic Acids Res. 20:1371-1377(1992).
RN [4]
```

```
RP CHARACTERIZATION.
RC TISSUE=Egg;
RX MEDLINE=93192604; PubMed=8448385;
RA Nitta K., Oyama F., Oyama R., Sekiguchi K., Kawauchi H.,
RA Takayanagi Y., Hakomori S., Titani K.;
RT "Ribonuclease activity of sialic acid-binding lectin from Rana
RT catesbeiana eggs.";
RL Glycobiology 3:37-45(1993).
RN [5]
RP STRUCTURE BY NMR OF 23-133.
RX MEDLINE=98437383; PubMed=9761686;
RA Chang C.-F., Chen C., Chen Y.-C., Hom K., Huang R.-F., Huang T.H.;
RT "The solution structure of a cytotoxic ribonuclease from the oocytes
RT of Rana catesbeiana (bullfrog).";
RL J. Mol. Biol. 283:231-244(1998).
CC -!- FUNCTION: Preferentially cleaves single-stranded RNA at pyrimidine
CC residues with a 3'flanking guanine. Hydrolyzes poly(U) and poly(C)
CC as substrates, and prefers the former. The S-lectins in frog eggs
CC may be involved in the fertilization and development of the frog
CC embryo. This lectin agglutinates various animal cells, including
CC normal lymphocytes, erythrocytes, and fibroblasts of animal and
CC human origin. It is cytotoxic against several tumor cells.
CC -!- SUBUNIT: Monomer.
CC -!- SUBCELLULAR LOCATION: Secreted.
CC -!- SIMILARITY: Belongs to the pancreatic ribonuclease family.
CC
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CC
CC EMBL; AF039104; AAD10702.1; -.
DR PIR; A27121; A27121.
DR PDB; 1BC4; 28-OCT-98.
DR PDB; 1M07; 21-JAN-03.
DR InterPro; IPR001427; RNaseA.
DR Pfam; PF00074; rnaase; 1.
DR ProDom; PD000535; RNaseA; 1.
DR SMART; SM00092; RNase_Pc; 1.
DR PROSITE; PS00127; RNASE_PANCREATIC; 1.
DR Hydrolase; Nuclease; Endonuclease; Sialic acid; Lectin; 3D-structure;
KW Signal; Pyrrolidone carboxylic acid.
FT SIGNAL 1 22
FT CHAIN 23 133 RIBONUCLEASE, OOCYTES.
FT MOD_RES 23 23 PYRROLIDONE CARBOXYLIC ACID.
FT ACT_SITE 32 32
FT ACT_SITE 57 57
FT ACT_SITE 125 125
FT DISULFID 41 93
FT DISULFID 56 103
FT DISULFID 74 118
FT DISULFID 115 132
FT HELIX 25 32
FT HELIX 41 45
FT TURN 48 49
FT STRAND 59 63
FT HELIX 67 73
FT TURN 74 74
FT STRAND 79 84
FT STRAND 90 95
FT STRAND 105 110
FT STRAND 114 119
FT TURN 120 121
FT STRAND 122 129
SQ SEQUENCE 133 AA; 14762 MW; A7D62594F7D16F0C CRC64;

Query Match 49.4%; Score 286; DB 1; Length 133;
Best Local Similarity 48.8%; Pred. No. 7.1e-24;
Matches 54; Conservative 16; Mismatches 33; Indels 8; Gaps 3;
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QY 1 QDWLTFOKKHLTNRDVCNNILSNLF----HCKDKNTFYSRPEPVKAICKGIIASKN 56
   |||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:
Db 23 QNWATFOKKHLIINTPIINCNTIMDNIVIGQCKRVNTFISSATTVKAICTGVI-NMN 81
   |||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:

QY 57 VLTTFEFLSDC---NVTSRCKYKLKSTNTFCVTCENQAPVHFVGVGHC 104
   |||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:
Db 82 VLSITRFLQNTCTRTSITPRCPYNSRTETNYICVKENQYVHPFAGIGRC 132
   |||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:

RESULT 3
LECS_RANJA
ID LEC_S_RANJA STANDARD; PRT; 111 AA.
AC P18839;
DT 01-NOV-1990 (Rel. 16, Created)
DT 01-FEB-1994 (Rel. 28, Last sequence update)
DT 10-OCT-2003 (Rel. 42, Last annotation update)
DE Sialic acid-binding lectin (EC 3.1.27.-).
OS Rana japonica (Japanese redbellied frog).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Amphibia; Batrachia; Anura; Neobatrachia; Ranoidea; Ranidae; Rana.
OX NCBI_TaxID=8402;
RN [1]
RP SEQUENCE, AND DISULFIDE BONDS.
RC TISSUE=Egg;
RX MEDLINE=91035319; PubMed=2229005;
RA Kamiya Y., Oyama F., Oyama R., Sakakibara F., Nitta K., Kawauchi H.,
RA Takayanagi Y., Titani K.;
RT "Amino acid sequence of a lectin from Japanese frog (Rana japonica)
RT eggs.";
RL J. Biochem. 108:139-143(1990).
CC -!- FUNCTION: The S-lectins in frog eggs may be involved in the
CC fertilization and development of the frog embryo. This lectin
CC preferentially agglutinate a large variety of tumor cells, but it
CC does not agglutinate non-transformed cells and erythrocytes.
CC -!- SUBUNIT: Monomer.
CC -!- SUBCELLULAR LOCATION: Secreted.
CC -!- SIMILARITY: Belongs to the pancreatic ribonuclease family.
DR PIR; JX0120; JX0120.
DR HSSP; P11916; IBC4.
DR InterPro; IPR001427; RNaseA.
DR Pfam; PF00074; RNaseA; 1.
DR ProDom; PD000535; RNaseA; 1.
DR SMART; SM00092; RNaseA; 1.
DR PROSITE; PS00127; RNASE_PANCREATIC; 1.
KW Hydrolase; Nuclease; Endonuclease; Sialic acid; Lectin;
KW Pyridolone carboxylic acid.
FT MOD_RES 1 1 PYRROLIDONE CARBOXYLIC ACID.
FT ACT_SITE 10 10 BY SIMILARITY.
FT ACT_SITE 35 35 BY SIMILARITY.
FT ACT_SITE 104 104 BY SIMILARITY.
FT DISULFID 19 72 BY SIMILARITY.
FT DISULFID 34 82 BY SIMILARITY.
FT DISULFID 52 97 BY SIMILARITY.
FT DISULFID 94 111 PROBABLE.
SQ SEQUENCE 111 AA; 12326 MW; FDEBDDF3834ED679 CRC64;

Query Match 48.3%; Score 279.5; DB 1; Length 111;
Best Local Similarity 44.1%; Pred. No. 2.9e-23;
Matches 49; Conservative 19; Mismatches 36; Indels 7; Gaps 2;

QY 1 QDWLTFOKKHLTNRDVCNNILSNLF----HCKDKNTFYSRPEPVKAICKGIIASKN 56
   |||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:
Db 1 QNWAFQEKHIPNTSNINCNTIMDKSIYIVGQCKERNFTFISSATTVKAICSGASTNRN 60
   |||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:

QY 57 VLTTFEFLSDC---NVTSRCKYKLKSTNTFCVTCENQAPVHFVGVGHC 104
   |||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:
Db 61 VLSITRFLQNTCTRSATAPRCPYNSRTETNYICVKENRLPVPFAGIGRC 111
   |||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:

RESULT 4
RNPL_RANCA
ID RNPL_RANCA STANDARD; PRT; 111 AA.
AC P14626;

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DT 01-APR-1990 (Rel. 14, Created)
DT 01-FEB-1994 (Rel. 28, Last sequence update)
DT 28-FEB-2003 (Rel. 41, Last annotation update)
DE Ribonuclease, liver (EC 3.1.27.5).
OS Rana catesbeiana (Bull frog).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Amphibia; Batrachia; Anura; Neobatrachia; Ranoidea; Ranidae; Rana.
OX NCBI_TaxID=8400;
RN [1]
RP SEQUENCE.
RC TISSUE=Liver;
RX MEDLINE=90130374; PubMed=2613682;
RA Nitta R., Katayama N., Okabe Y., Iwama M., Watanabe H., Abe Y.,
RA Okazaki T., Ohgi K., Irie M.;
RT "Primary structure of a ribonuclease from bullfrog (Rana catesbeiana)
RT liver.";
RL J. Biochem. 106:729-735(1989).
CC -!- CATALYTIC ACTIVITY: Endonucleolytic cleavage to nucleoside 3'-
CC phosphates and 3'-phosphooligonucleotides ending in C-P or U-P
CC with 2',3'-cyclic phosphate intermediates.
CC -!- SUBCELLULAR LOCATION: Secreted.
CC -!- SIMILARITY: Belongs to the pancreatic ribonuclease family.
DR PIR; JX0085; JX0085.
DR HSSP; P11916; IBC4.
DR InterPro; IPR001427; RNaseA.
DR Pfam; PF00074; RNaseA; 1.
DR ProDom; PD000535; RNaseA; 1.
DR SMART; SM00092; RNaseA; 1.
DR PROSITE; PS00127; RNASE_PANCREATIC; 1.
KW Hydrolase; Nuclease; Endonuclease; Pyridolone carboxylic acid.
FT MOD_RES 1 1 PYRROLIDONE CARBOXYLIC ACID.
FT ACT_SITE 10 10 BY SIMILARITY.
FT ACT_SITE 35 35 BY SIMILARITY.
FT ACT_SITE 104 104 BY SIMILARITY.
FT DISULFID 19 72 BY SIMILARITY.
FT DISULFID 34 82 BY SIMILARITY.
FT DISULFID 52 97 BY SIMILARITY.
FT DISULFID 94 111 PROBABLE.
SQ SEQUENCE 111 AA; 12461 MW; D64BA72456C10788 CRC64;

Query Match 45.5%; Score 263.5; DB 1; Length 111;
Best Local Similarity 42.3%; Pred. No. 1.5e-21;
Matches 47; Conservative 19; Mismatches 38; Indels 7; Gaps 2;

QY 1 QDWLTFOKKHLTNRDVCNNILSNLF----HCKDKNTFYSRPEPVKAICKGIIASKN 56
   |||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:
Db 1 QNWAFQEKHIRSTSSIDCNIMDKAIYIVGCKERNFTFISSEDNVKAICSGVSPDRK 60
   |||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:

QY 57 VLTTFEFLSDC---NVTSRCKYKLKSTNTFCVTCENQAPVHFVGVGHC 104
   |||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:
Db 61 ELSTTSFKLNTCIRDSITPRCPYHSPDNNKICVKCEKQLPVHFVGVGK 111
   |||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:

RESULT 5
RNP_IGUITG
ID RNP_IGUITG STANDARD; PRT; 119 AA.
AC P80287;
DT 01-FEB-1994 (Rel. 28, Created)
DT 01-FEB-1994 (Rel. 28, Last sequence update)
DT 28-FEB-2003 (Rel. 41, Last annotation update)
DE Ribonuclease pancreatic (EC 3.1.27.5) (RNase 1) (RNase A).
OS Iguana iguana (Common iguana).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Lepidosauria; Squamata; Iguania; Iguanidae; Iguaninae; Iguana.
OX NCBI_TaxID=8517;
RN [1]
RP SEQUENCE.
RC TISSUE=Pancreas;
RX MEDLINE=94139745; PubMed=8307028;
RA Zhao W., Beintema J.J., Hofsteenge J.;
RT "The amino acid sequence of iguana (Iguana iguana) pancreatic
RT ribonuclease.";
RL Eur. J. Biochem. 219:641-646(1994).

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DR PRINTS; PRO0794; RIBONUCLEASE.
 DR ProDom; PD000535; RNaseA; 1.
 DR SMART; SM00092; RNase P; 1.
 DR PROSITE; PS00127; RNASE PANCREATIC; 1.
 KW Hydrolase; Nuclease; Endonuclease; Angiogenesis;
 KW Protein synthesis inhibitor; Signal; Pyrrolidone carboxylic acid.
 FT SIGNAL 1 24 BY SIMILARITY.
 FT CHAIN 25 146 ANGIOGENIN.
 FT MOD_RES 25 25 PYRROLIDONE CARBOXYLIC ACID (BY
 FT ACT_SITE 37 37 BY SIMILARITY.
 FT ACT_SITE 64 64 BY SIMILARITY.
 FT ACT_SITE 138 138 BY SIMILARITY.
 FT DISULFID 50 105 BY SIMILARITY.
 FT DISULFID 63 116 BY SIMILARITY.
 FT DISULFID 81 131 BY SIMILARITY.
 SQ SEQUENCE 146 AA; 16444 MW; 27860112E95B8DF9 CRC64;

Query Match
 Best Local Similarity 21.5%; Score 124.5; DB 1; Length 146;
 Matches 30; Conservative 17; Mismatches 31; Indels 23; Gaps 4;

QY 5 TFOCKHLTNTROVDCNNILSTLNFHCKDKNTFTYSRPEPVKAIC---KGIASKNV-LTT 60
 DB 53 TWRRHLTSP-----CKDINTFIHGNRHHKALCGDGNPNPYGENLRISK 97

QY 61 FEFYLSDCNVTS-----RPOCKYKLKSTNTFCVTCENQAPVH 97
 DB 98 SPFQVTCNLGSGSPRPPCOYRATRGSRNIVGCGNGLPVH 138

RESULT 8
 RNP_GALMU STANDARD; PRT; 124 AA.
 ID RNP_GALMU AC P00680;
 DT 21-JUL-1986 (Rel. 01, Created)
 DT 21-JUL-1986 (Rel. 01, Last sequence update)
 DT 28-FEB-2003 (Rel. 41, Last annotation update)
 DE Ribonuclease pancreatic (EC 3.1.27.5) (RNase A).
 GN RNASE1 OR RNS1.
 OS Galea musteloides (Cuis).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Rodentia; Hystriognathi; Caviidae; Galea.
 OX NCBI_TaxID=10146;
 RN [1]
 RP SEQUENCE.
 RX MEDLINE=87036770; PubMed=6571219;
 RA Beintema J.J., Neuteboom B.;
 RT "Origin of the duplicated ribonuclease gene in guinea-pig: comparison
 RT of the amino acid sequences with those of two close relatives:
 RT capybara and cuis ribonuclease.";
 RL J. Mol. Evol. 19:145-152(1983).
 CC -!- CATALYTIC ACTIVITY: Endonucleolytic cleavage to nucleoside 3'-
 CC phosphates and 3'-phosphooligonucleotides ending in C-P or U-P
 CC with 2', 3'-cyclic phosphate intermediates.
 CC -!- SUBCELLULAR LOCATION: Secreted.
 CC -!- TISSUE SPECIFICITY: Pancreas.
 CC -!- SIMILARITY: Belongs to the pancreatic ribonuclease family.
 DR PIR; A00827; NRUI.
 DR HSGP; P00656; 1SRN.
 DR InterPro; IPR001427; RNaseA.
 DR Pfam; PF00074; RNaseA; 1.
 DR PRINTS; PRO0794; RIBONUCLEASE.
 DR ProDom; PD000535; RNaseA; 1.
 DR SMART; SM00092; RNase P; 1.
 DR PROSITE; PS00127; RNASE PANCREATIC; 1.
 KW Hydrolase; Nuclease; Endonuclease.
 FT DISULFID 26 84 BY SIMILARITY.
 FT DISULFID 40 95 BY SIMILARITY.
 FT DISULFID 58 110 BY SIMILARITY.
 FT DISULFID 65 72 BY SIMILARITY.
 FT ACT_SITE 12 12 BY SIMILARITY.
 FT ACT_SITE 41 41 BY SIMILARITY.

FT ACT_SITE 119 119 BY SIMILARITY.
 FT VARIANT 1 1 MISSING (IN 1/3 OF THE MOLECULES).
 SQ SEQUENCE 124 AA; 13870 MW; 609C7E251A7BBA25 CRC64;

Query Match
 Best Local Similarity 21.2%; Score 123; DB 1; Length 124;
 Matches 33; Conservative 21; Mismatches 39; Indels 24; Gaps 7;

QY 4 LTFQCKHL-----TNTRDVDCNNIL---STNLFHCKDKNTFTYSRPEPVKAIC--KGI 51
 DB 6 MAFQKHMDSDGHPDNTN--YCNEWMVRSTQGRKPVNTFVHLEAVQVCSQKNV 63

QY 52 IASKNVLTTFEY----LSDCNVTSRPP-----CKYKLKSTNTFCVTCEN--QAPVHF 98
 DB 64 PCKNGQTCYQSHSSMRITDCRVTSSKYPNCYSRYMTQAKSLIIVACEGTSPVPHF 120

RESULT 9
 ANGI_BOVIN STANDARD; PRT; 148 AA.
 ID ANGI_BOVIN AC P10152; O9GKP9;
 DT 01-MAR-1989 (Rel. 10, Created)
 DT 28-FEB-2003 (Rel. 41, Last sequence update)
 DT 15-MAR-2004 (Rel. 43, Last annotation update)
 DE Angiogenin-1 precursor (EC 3.1.27.-).
 GN ANGI OR ANG.
 OS Bos taurus (Bovine).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
 OC Bovidae; Bovinae; Bos.
 OX NCBI_TaxID=9913;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC TISSUE=Liver;
 RA Chang S.-I.;
 RL "Cloning, sequencing, and expression of bovine angiogenin.";
 RL Submitted (MAR-1999) to the EMBL/GenBank/DBJ databases.
 RN [2]
 RP SEQUENCE OF 24-148.
 RC TISSUE=Milk;
 RX MEDLINE=89065101; PubMed=3197838;
 RA Maes P., Damart D., Rommens C., Montreuil J., Spik G., Tartar A.;
 RT "The complete amino acid sequence of bovine milk angiogenin.";
 RL FEBS Lett. 241:41-45(1988).
 RN [3]
 RP SEQUENCE OF 24-148.
 RC TISSUE=Plasma;
 RX MEDLINE=89375344; PubMed=2775757;
 RA Bond M.D., Strydom D.J.;
 RT "Amino acid sequence of bovine angiogenin.";
 RL Biochemistry 28:6110-6113(1989).
 RN [4]
 RP CHARACTERIZATION, AND SEQUENCE OF 25-55.
 RC TISSUE=Plasma;
 RX MEDLINE=89118214; PubMed=3064806;
 RA Bond M.D., Vallee B.L.;
 RT "Isolation of bovine angiogenin using a placental ribonuclease
 RT inhibitor binding assay.";
 RL Biochemistry 27:6282-6287(1988).
 RN [5]
 RP X-RAY CRYSTALLOGRAPHY (1.5 ANGSTROMS).
 RX MEDLINE=95224057; PubMed=7708754;
 RA Acharya K.R., Shapiro R., Riordan J.F., Vallee B.L.;
 RT "Crystal structure of bovine angiogenin at 1.5-A resolution.";
 RL Proc. Natl. Acad. Sci. U.S.A. 92:2949-2953(1995).
 RN [6]
 RP STRUCTURE BY NMR.
 RX MEDLINE=96280645; PubMed=8688423;
 RA Leguin O., Albaret C., Bontems F., Spik G., Lallemand J.-Y.;
 RT "Solution structure of bovine angiogenin by 1H nuclear magnetic
 RT resonance spectroscopy.";
 RL Biochemistry 35:8870-8880(1996).
 CC -!- FUNCTION: May function as a tRNA-specific ribonuclease that binds

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CC      to actin on the surface of endothelial cells; once bound,
CC      angiogenin is endocytosed and translocated to the nucleus, thereby
CC      promoting the endothelial invasiveness necessary for blood vessel
CC      formation. Angiogenin induces vascularization of normal and
CC      malignant tissues. Abolishes protein synthesis by specifically
CC      hydrolyzing cellular tRNAs. Binds tightly to placental
CC      ribonuclease inhibitor and has very low ribonuclease activity.
CC      -!- SUBCELLULAR LOCATION: Secreted.
CC      -!- TISSUE SPECIFICITY: Serum and milk.
CC      -!- SIMILARITY: Belongs to the pancreatic ribonuclease family.
CC      -----
CC      This SWISS-PROT entry is copyright. It is produced through a collaboration
CC      between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC      the European Bioinformatics Institute. There are no restrictions on its
CC      use by non-profit institutions as long as its content is in no way
CC      modified and this statement is not removed. Usage by and for commercial
CC      entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC      or send an email to license@isb-sib.ch).
CC      -----
CC      EMBL; AF135124; AAG47631.1; -.
CC      EDB; IAGI; 03-APR-96.
CC      EDB; IGIO; 07-DEC-96.
CC      InterPro; IPR001427; RNaseA.
CC      Pfam; PF00074; RNaseA; 1.
CC      PRINTS; PR00794; RIBONUCLEASE.
CC      ProDom; PD000535; RNaseA; 1.
CC      SMART; SM00092; RNase_Pc; 1.
CC      PROSITE; PS00127; RNASE_PANCREATIC; 1.
CC      Hydroxylase; Nuclease; Endonuclease; Angiogenesis;
CC      KW Protein synthesis inhibitor; Signal; 3D-structure.
CC      FT SIGNAL 1 23
CC      CHAIN 24 148
CC      FT ACT_SITE 37 37
CC      FT ACT_SITE 64 64
CC      FT ACT_SITE 138 138
CC      FT DISULFID 50 105
CC      FT DISULFID 63 116
CC      FT DISULFID 81 131
CC      SEQUENCE 148 AA; 16969 MW; B7999124CBB523DD CRC64;
CC      -----
CC      Query Match 20.7%; Score 120; DB 1; Length 148;
CC      Best Local Similarity 32.7%; Pred. No. 5.2e-06;
CC      Matches 32; Conservative 14; Mismatches 32; Indels 20; Gaps 5;
CC      -----
CC      QY 16 DVDCNNILTNLF--HCKDKNTFIYSRPEPVKAICK-----GIIASKNVLITTFEY 64
CC      DB 47 DEYCFNMKNRRLTRPCKDRNTFIHGKNKDKAICEDRNGQPYRGDLRISK-----EFQ 101
CC      QY 65 LSDC---NVTSR--PCKYKLLKSTNTFCVTCENQAPVHF 98
CC      DB 102 IITCKHGSSRPCHYGATEDSRVIVGCEGLPVHF 139
CC      -----
CC      RESULT 10
CC      RNPB CAVPO
CC      ID RNPB CAVPO STANDARD; PRT; 128 AA.
CC      AC P00679;
CC      DT 21-JUL-1986 (Rel. 01, Created)
CC      DT 21-JUL-1986 (Rel. 01, Last sequence update)
CC      DT 28-FEB-2003 (Rel. 41, Last annotation update)
CC      DE Ribonuclease pancreatic B (EC 3.1.27.5) (RNase IB).
CC      OS Cavia porcellus (Guinea pig).
CC      OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
CC      OC Mammalia; Eutheria; Rodentia; Hystricognathi; Caviidae; Cavia.
CC      OX NCBI_TaxID=10141;
CC      RN [1]
CC      RP SEQUENCE.
CC      RC TISSUE=Pancreas;
CC      RX MEDLINE=77185023; PubMed=862624;
CC      RA van den Berg A., van den Hende-Timmer L., Hofsteenge J., Gaastra W.,
CC      RA Beintema J.J.;
CC      RT "Guinea-pig pancreatic ribonucleases. Isolation, properties, primary
CC      RT structure and glycosidation."

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RL Eur. J. Biochem. 75:91-100(1977).
CC      -!- CATALYTIC ACTIVITY: Endonucleolytic cleavage to nucleoside 3'-
CC      phosphates and 3'-phosphooligonucleotides ending in C-P or U-P
CC      with 2',3'-cyclic phosphate intermediates.
CC      -!- SUBCELLULAR LOCATION: Secreted.
CC      -!- TISSUE SPECIFICITY: Pancreas.
CC      -!- SIMILARITY: Belongs to the pancreatic ribonuclease family.
CC      PIR; A00826; NRGPB.
CC      HSP; P00656; ILSRN.
CC      InterPro; IPR001427; RNaseA.
CC      Pfam; PF00074; RNaseA; 1.
CC      PRINTS; PR00794; RIBONUCLEASE.
CC      ProDom; PD000535; RNaseA; 1.
CC      SMART; SM00092; RNase_Pc; 1.
CC      PROSITE; PS00127; RNASE_PANCREATIC; 1.
CC      Hydroxylase; Nuclease; Endonuclease; Glycoprotein.
CC      FT DISULFID 26 84
CC      FT DISULFID 40 95
CC      FT DISULFID 58 110
CC      FT DISULFID 65 72
CC      FT ACT_SITE 12 12
CC      FT ACT_SITE 41 41
CC      FT ACT_SITE 119 119
CC      FT CARBOHYD 21 21
CC      FT CARBOHYD 34 34
CC      FT VARIANT 64 64
CC      SQ SEQUENCE 128 AA; 14406 MW; A2P4101A1A33E93B CRC64;
CC      -----
CC      Query Match 20.4%; Score 118; DB 1; Length 128;
CC      Best Local Similarity 25.9%; Pred. No. 7.2e-06;
CC      Matches 30; Conservative 25; Mismatches 39; Indels 22; Gaps 7;
CC      -----
CC      QY 4 LTFQKKHL-----TNRDVCNNIL---STNLFHCKDKNTFIYSRPEPVKAICK--KGII 52
CC      DB 6 MKFQHQMDPEGSPNSNY-CNVMMIRNMTQGRCKPVNTFVHESLADVQVCFQKNVL 64
CC      QY 53 ASKNVLITTFEY----LSDCNVTSRP-----CKYKLLKSTNTFCVTCENQ--APVHF 98
CC      DB 65 CKNGQTCNCQSYSRMRITDCRVTSKFKFNCYSRMSQAKSIIVACEGDPVYPVHF 120
CC      -----
CC      RESULT 11
CC      RNP MYOCO
CC      ID RNP MYOCO STANDARD; PRT; 128 AA.
CC      AC P00676;
CC      DT 21-JUL-1986 (Rel. 01, Created)
CC      DT 21-JUL-1986 (Rel. 01, Last sequence update)
CC      DT 28-FEB-2003 (Rel. 41, Last annotation update)
CC      DE Ribonuclease pancreatic (EC 3.1.27.5) (RNase A).
CC      GN RNASE1 OR RNS1.
CC      OS Myocastor coypus (Coypu) (Nutria).
CC      OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
CC      OC Mammalia; Eutheria; Rodentia; Hystricognathi; Myocastoridae;
CC      OC Myocastor.
CC      OX NCBI_TaxID=10157;
CC      RN [1]
CC      RP SEQUENCE.
CC      RC TISSUE=Pancreas;
CC      RX MEDLINE=77065676; PubMed=99896;
CC      RA van den Berg A., van den Hende-Timmer L., Beintema J.J.;
CC      RT "Isolation, properties and primary structure of coypu and chinchilla
CC      RT pancreatic ribonuclease."
CC      RL Biochim. Biophys. Acta 453:400-409(1976).
CC      -!- CATALYTIC ACTIVITY: Endonucleolytic cleavage to nucleoside 3'-
CC      phosphates and 3'-phosphooligonucleotides ending in C-P or U-P
CC      with 2',3'-cyclic phosphate intermediates.
CC      -!- SUBCELLULAR LOCATION: Secreted.
CC      -!- TISSUE SPECIFICITY: Pancreas.
CC      -!- SIMILARITY: Belongs to the pancreatic ribonuclease family.
CC      PIR; A00823; NRCU.
CC      HSP; P00656; ILSRN.
CC      InterPro; IPR001427; RNaseA.
CC      Pfam; PF00074; RNaseA; 1.

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Query Match Score 116; DB 1; Length 124;
Best Local Similarity 26.9%; Pred. No. 1.le-05;
Matches 32; Conservative 16; Mismatches 43; Indels 28; Gaps 6

DQY 4 LTFKQHLLNTRDVD-----CNILSTNLF---HCKDKNTFYSPFPVKAICKGIIASK 55
DDB :|::||: ||:||: |
DDB 6 MKPQRHMDSRGSPNNPNYCMMRRKMTCGRCPKNVTFFVESLEDDKAVC----SQX 61
QY 56 NVL-----TTEFFYLSDCVTSRP-----CYKLKKSTNFVCVCENQ--APVF 98
DDB :|::||: ||:||: |
DDB 62 NLCKNGRTNCYESNSTMHTDCROTGSKYPCAYKTQSKEKHIVACGNPVVPVHF 120
SEQUENCE 128 AA; 14267 MW; 4EB924E52B445832 CRC64;

Query Match Score 117; DB 1; Length 128;
Best Local Similarity 28.2%; Pred. No. 9.2e-06;
Matches 33; Conservative 19; Mismatches 37; Indels 28; Gaps 7;

DQY 6 FQKQHLLNTRDVDCCNIL-STNFL-HCKDKNTFYSPFPVKAICKGIIASKNV 57
DDB :|::||: ||:||: |
DDB 8 FEHQHMDSRGSTNPNYCNEMMKSNRMTCGRCPKNVTFFVEPLADVOAQC-----FOKNV 63
QY 58 L-----TTEFFYLSDCVTSRP-----CYKLKKSTNFVCVCENQ--APVF 98
DDB :|::||: ||:||: |
DDB 64 LCKNGQTNCYNSNMHTDCRVTSNDYPNCYSITSQEKSIVVACEGNPVVPVHF 120
SEQUENCE 124 AA; 14125 MW; F57475459F697E20 CRC64;

RNP BALAC STANDARD; PRT; 124 AA.

ID RNP_BALAC ID ANGI_MACMU STANDARD; PRT; 146 AA.
AC QWNE33;
DT 28-FEB-2003 (Rel. 41, Created)
DT 28-FEB-2003 (Rel. 41, Last sequence update)
DE Angiotensin precursor (EC 3.1.27.-) (Ribonuclease 5) (RNase 5).
GN ANG OR RNASES.
OS Macaca mulatta (Rhesus macaque).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Cercopithecoidea;
OX NCBI_TaxID=9544;
RN [1]
RX MEDLINE=21918422; PubMed=11919285;
RA Zhang J., Rosenberg H.F.;
RT "Diversifying selection of the tumor-growth promoter angiotensin in primate evolution."
RL Mol. Biol. Evol. 19:438-445(2002).
CC -! FUNCTION: May function as a RNA-specific ribonuclease that binds to actin on the surface of endothelial cells; once bound, angiotensin is endocytosed and translocated to the nucleus, thereby promoting the endothelial invasiveness necessary for blood vessel formation. Angiotensin induces vascularization of normal and malignant tissues. Abolishes protein synthesis by specifically hydrolyzing cellular tRNAs (By similarity).
CC -! SUBCELLULAR LOCATION: Secreted.
CC -! SIMILARITY: Belongs to the pancreatic ribonuclease family.
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EMBL; AF441667; AAL61649.1; -.
InterPro; IPR001427; RNaseA.
Pfam; PF00074; rnaseA; 1.
PRINTS; PR00794; RIBONUCLEASE.
ProDom; PD000535; RNaseA; 1.
SMART; SM00092; RNase_Pc; 1.
PROSITE; PS00127; RNASE PANCREATIC; 1.
KW Hydrolase; Nuclease; Endonuclease; Angionogenesis;
FT SIGNAL 1 24 BY SIMILARITY.
FT CHAIN 25 146 PYROLIDONE CARBOXYLIC ACID (BY
FT MOD_RES 25 25 PYROLIDONE CARBOXYLIC ACID (BY
FT ACT_SITE 37 37 BY SIMILARITY.
FT ACT_SITE 64 64 BY SIMILARITY.
FT DISULFID 138 138 BY SIMILARITY.
FT DISULFID 50 105 BY SIMILARITY.
FT DISULFID 63 116 BY SIMILARITY.
FT DISULFID 81 131 BY SIMILARITY.
SQ SEQUENCE 146 AA; 16301 MW; E39A89215DB2A24 CRC64;

[illegible]

```
Query Match 19.9%; Score 115.5; DB 1; Length 146;
Best Local Similarity 27.7%; Pred. No. 1.5e-05;
Matches 28; Conservative 17; Mismatches 33; Indels 23; Gaps 4;

QY 5 TQKHLNTRDVCNNILSTNLFHCKKNTIYSRPEPVKAIC---KGIASKNV-LTT 60
DB 53 TMRRLHLSPTSP-----CKDINTFVHGNNRHITLGDENGSPYGGNLRIST 97
QY 61 FEFYLSDCNVTS---RPCKYKLKSTNTFCVTCENQAPVH 97
DB 98 SFQVTTCKLRGSRPPQYRATRGSRNIVVGCENGLPVH 138

RESULT 14
ANGI_MOUSE
ID ANGI_MOUSE STANDARD; PRT; 145 AA.
AC P21570;
DT 01-MAY-1991 (Rel. 18, Created)
DT 01-MAY-1991 (Rel. 18, Last sequence update)
DT 15-MAR-2004 (Rel. 43, Last annotation update)
DE Angiogenin precursor (EC 3.1.27.-) (Ribonuclease 5) (RNase 5).
GN ANG.
OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX NCBI_TaxID=10090;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=91025023; PubMed=2222458;
RA Bond M.D., Vallee B.L.;
RT "Isolation and sequencing of mouse angiogenin DNA.";
RL Biochem. Biophys. Res. Commun. 171:988-995(1990).
RN [2]
RP SEQUENCE FROM N.A.
RC STRAIN=FVB/N; TISSUE=Liver;
RX MEDLINE=22388257; PubMed=12477932;
RA Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,
RA Klausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,
RA Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
RA Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,
RA Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
RA Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,
RA Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,
RA Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,
RA Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,
RA Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
RA Villalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,
RA Fahy J., Helton E., Kettman M., Madan A., Rodriguez S., Sanchez A.,
RA Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,
RA Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,
RA Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M.,
RA Butterfield Y.S.N., Krzywinski M.I., Skalska U., Smallos D.E.,
RA Schnerch A., Schein J.E., Jones S.J.M., Marra M.A.;
RT "Generation and initial analysis of more than 15,000 full-length
human and mouse cDNA sequences.";
RL Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).
RN [3]
RP PARTIAL SEQUENCE.
RC TISSUE=Serum;
RX MEDLINE=93192291; PubMed=8448182;
RA Bond M.D., Strydom D.J., Vallee B.L.;
RT "Characterization and sequencing of rabbit, pig and mouse
angiogenins: discernment of functionally important residues and
regions.";
RL Biochim. Biophys. Acta 1162:177-186(1993).
CC -!- FUNCTION: May function as a tRNA-specific ribonuclease that binds
to actin on the surface of endothelial cells; once bound,
thereby promoting the endothelial invasiveness necessary for blood vessel
formation. Angiogenin induces vascularization of normal and
malignant tissues. Abolishes protein synthesis by specifically
hydrolyzing cellular tRNAs.
```


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OM protein - protein search, using sw model

Run on: May 7, 2004, 21:25:55 ; Search time 44.7895 Seconds
(without alignments)
662.376 Million cell updates/sec

Title: US-09-961-400-6

Perfect score: 583

Sequence: 1 MQDWLTFQKKHLNTRDVDC.....TFCVTCENQAPVHFVGVGHC 105

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 1586107 seqs, 282547505 residues

Total number of hits satisfying chosen parameters: 1586107

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%
Listing first 45 summaries

Database : A Geneseq 29Jan04:*

- 1: Geneseqp1980s:*
- 2: Geneseqp1990s:*
- 3: Geneseqp2000s:*
- 4: Geneseqp2001s:*
- 5: Geneseqp2002s:*
- 6: Geneseqp2003as:*
- 7: Geneseqp2003bs:*
- 8: Geneseqp2004s:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	583	100.0	105	2	AAY28867 Recombina
2	580	99.5	105	2	AAY28869 Recombina
3	578	99.1	104	2	AAY28865 Rana pipi
4	578	99.1	105	2	AAY28871 Recombina
5	578	99.1	127	2	AAY28879 Rana pipi
6	575	98.6	104	2	AAY28866 Recombina
7	573	98.3	104	2	AAY28870 Recombina
8	558	95.7	104	2	AAY06544 Antitumou
9	558	95.7	105	2	AAY35123 R. pipien
10	558	95.7	105	2	AAY39400 Recombina
11	558	95.7	355	2	AAY35125 R. pipien
12	558	95.7	358	2	AAY35130 R. pipien
13	556	95.4	104	2	AAY30301 Recombina
14	556	95.4	104	4	AB31666 Recombina
15	556	95.4	104	5	AB31666 Amino aci
16	556	95.4	112	2	AB32650 Northern
17	556	95.4	251	2	AB35118 R. pipien
18	556	95.4	254	2	AB35134 R. pipien
19	556	95.4	355	2	AB35135 R. pipien
20	556	95.4	355	2	AB35133 R. pipien
21	556	95.4	366	2	AB35129 R. pipien
22	556	95.4	379	2	AB35132 R. pipien
23	553	94.9	104	2	AB35126 R. pipien
24	553	94.9	104	2	AA12344 Protein w
25	553	94.9	104	2	AA47303 ONCONASE
					AAW00736 Protein d

26	553	94.9	104	2	AAW14065	Aaw14065 Onconase
27	553	94.9	104	2	AAW06543	Aaw06543 Antitumou
28	553	94.9	104	2	AAW88233	Aaw88233 Rana pipi
29	553	94.9	104	2	AAW33322	Aay33322 Frog onco
30	551	94.5	105	2	AAW35116	Aaw35116 R. pipien
31	551	94.5	106	2	AAW35122	Aaw35122 R. pipien
32	551	94.5	107	2	AAW35117	Aaw35117 R. pipien
33	550	94.3	104	2	AAW30302	Aaw30302 Recombina
34	550	94.3	105	2	AAW35115	Aaw35115 R. pipien
35	548	94.0	104	2	AAW18224	Aaw18224 Antitumou
36	548	94.0	104	4	AB31667	ABg31667 Amino aci
37	547	93.8	358	2	AAW35127	Aaw35127 R. pipien
38	547	93.8	365	2	AAW35131	Aaw35131 R. pipien
39	547	93.8	365	2	AAW35120	Aaw35120 R. pipien
40	528	90.6	107	2	AAW35128	Aaw35128 R. pipien
41	495	84.9	360	2	AAW35121	Aaw35121 R. pipien
42	483.5	82.9	111	2	AAW35119	Aaw35119 R. pipien
43	445	76.3	83	2	AAW88234	Aaw88234 Rana pipi
44	445	76.3	83	2	AAW88234	Aaw88234 Rana pipi
45	289	49.6	111	2	AAW33321	Aay33321 Frog lect

ALIGNMENTS

RESULT 1

AAW28867	
ID	AAW28867 standard; protein; 105 AA.
XX	AAW28867;
AC	AAW28867;
XX	
DT	25-JAN-2000 (first entry)
XX	
DE	Recombinant Met (-1) RaPLR1.
XX	
KW	Recombinant Met (-1) Rana pipiens ribonuclease; RaPLR1; CD22; RNase;
KW	covalently bound; LL2 antibody; ligand binding moiety; cancerous B cell;
KW	Kaposi's sarcoma; human chorionic gonadotrophin; hCG; signal peptide;
KW	recombinant ribonuclease; cytotoxic fusion protein; cancer; frog;
KW	autoimmune disease.
XX	
OS	Rana pipiens.
OS	Synthetic.
XX	
FH	Key
FT	Misc-difference 1
FT	/note= "Met not found in wild type RaPLR1"
XX	
XX	WO9950398-A2.
XX	07-OCT-1999.
XX	
PF	26-MAR-1999; 99WO-US0006641.
XX	
PR	27-MAR-1998; 98US-0079751P.
XX	
PA	(USSH) US DEPT HEALTH & HUMAN SERVICES.
XX	
PI	Rybak SM, Newton DL;
XX	
DR	WPI; 1999-610847/52.
XX	N-PSDB; AAZ08126.
XX	
PT	New recombinant ribonucleases, used for killing target cells, e.g. for
PT	treating cancers, viral infections or autoimmune diseases.
XX	
PS	Claim 34; Page 57; 71pp; English.
XX	
CC	The present sequence is a recombinant Rana pipiens ribonuclease (RaPLR1)
CC	protein with Met at position 1. Carboxy terminal end of recombinant
CC	RaPLR1 has a covalently bound ligand binding moiety, which can be a LL2
CC	antibody directed against CD22 on cancerous B cells or human chorionic
CC	gonadotrophin (hCG) effective against Kaposi's sarcoma cells. Recombinant

CC ribonucleases can be expressed in bacteria without an N-terminal
 CC methionine due to the presence of a signal peptide that is cleaved by
 CC bacteria. The soluble expression of ribonuclease allows the proteins to
 CC be fused in-frame with ligand binding moieties to form cytotoxic fusion
 CC proteins. They can be used for treatment of cancer and autoimmune
 CC diseases
 XX Sequence 105 AA;
 SQ

Query Match 100.0%; Score 583; DB 2; Length 105;
 Best Local Similarity 100.0%; Pred. No. 1.1e-62;
 Matches 105; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MDWLTFQKKHLTNTDRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 60
 Db 1 MDWLTFQKKHLTNTDRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 60

QY 61 TSEFYLSDCNVTSRPCKYKLLKSTNTFCVTCENQAPVHFVGHC 105
 Db 61 TSEFYLSDCNVTSRPCKYKLLKSTNTFCVTCENQAPVHFVGHC 105

RESULT 2
 AAY28869
 ID AAY28869 standard; protein; 105 AA.
 XX
 AC AAY28869;
 XX
 DT 25-JAN-2000 (first entry)
 XX
 DE Recombinant Met(-1) RaPLR1 Met23Leu-(His)6 protein.
 XX
 KW Recombinant Met(-1) Rana pipiens ribonuclease Met23Leu-(His)6; RaPLR1;
 KW CD22; covalently bound; LL2 antibody; ligand binding moiety; RNase;
 KW cancerous B cell; Kaposi's sarcoma; human chorionic gonadotropin; hCG;
 KW signal peptide; recombinant ribonuclease; cytotoxic fusion protein;
 KW cancer; frog; autoimmune disease.
 XX
 OS Rana pipiens.
 OS Synthetic.
 XX
 FH Key Location/Qualifiers
 FT Misc-difference 1 /note= "Met not found in wild type RaPLR1"
 FT Misc-difference 1 /note= "(His)6 histidine tag attached to N-terminal Met"
 FT Misc-difference 24 /note= "wild type Met replaced with Leu"
 FT
 FT
 FN WO9950398-A2.
 XX
 XX 07-OCT-1999.
 XX
 XX 26-MAR-1999; 99WO-US006641.
 XX
 XX 27-MAR-1998; 98US-0079751P.
 XX
 XX (USSH) US DEPT HEALTH & HUMAN SERVICES.
 XX
 XX Rybak SM, Newton DL;
 XX
 XX WPI; 1999-610847/52.
 XX N-PSDB; AAZ08127.
 XX
 XX New recombinant ribonucleases, used for killing target cells, e.g. for
 XX treating cancers, viral infections or autoimmune diseases.
 XX
 XX Claim 4; Page 59; 71pp; English.
 XX
 XX The present sequence is a recombinant Rana pipiens ribonuclease protein
 XX (RaPLR1) with Met at position 1 attached to (His)6 tag and Met24Leu.
 CC Carboxy terminal end of recombinant RaPLR1 has a covalently bound ligand
 CC binding moiety, which can be a LL2 antibody directed against CD22 on

CC cancerous B cells or human chorionic gonadotropin (hCG) effective
 CC against Kaposi's sarcoma cells. Recombinant ribonucleases can be
 CC expressed in bacteria without an N-terminal methionine due to the
 CC presence of a signal peptide that is cleaved by bacteria. The soluble
 CC expression of ribonuclease allows the proteins to be fused in-frame with
 CC ligand binding moieties to form cytotoxic fusion proteins. They can be
 CC used for treatment of cancer and autoimmune diseases
 XX Sequence 105 AA;
 SQ

Query Match 99.5%; Score 580; DB 2; Length 105;
 Best Local Similarity 99.0%; Pred. No. 2.6e-62;
 Matches 104; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

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 Db 1 MDWLTFQKKHLTNTDRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 60

QY 61 TSEFYLSDCNVTSRPCKYKLLKSTNTFCVTCENQAPVHFVGHC 105
 Db 61 TSEFYLSDCNVTSRPCKYKLLKSTNTFCVTCENQAPVHFVGHC 105

RESULT 3
 AAY28865
 ID AAY28865 standard; protein; 104 AA.
 XX
 AC AAY28865;
 XX
 DT 25-JAN-2000 (first entry)
 XX
 DE Rana pipiens liver ribonuclease (RaPLR1).
 XX
 KW Rana pipiens liver ribonuclease; RaPLR1; covalently bound; LL2 antibody;
 KW ligand binding moiety; CD22; cancerous B cell; Kaposi's Sarcoma; frog;
 KW human chorionic gonadotropin; hCG; recombinant ribonuclease; RNase;
 KW signal peptide; cytotoxic fusion protein; cancer; autoimmune disease.
 XX
 OS Rana pipiens.
 XX
 FN WO9950398-A2.
 XX
 XX 07-OCT-1999.
 XX
 XX 26-MAR-1999; 99WO-US006641.
 XX
 XX 27-MAR-1998; 98US-0079751P.
 XX
 XX (USSH) US DEPT HEALTH & HUMAN SERVICES.
 XX
 XX Rybak SM, Newton DL;
 XX
 XX WPI; 1999-610847/52.
 XX N-PSDB; AAZ08124.
 XX
 XX New recombinant ribonucleases, used for killing target cells, e.g. for
 XX treating cancers, viral infections or autoimmune diseases.
 XX
 XX Claim 1; Page 55; 71pp; English.
 XX
 XX The present sequence is Rana pipiens liver ribonuclease (RaPLR1) protein.
 CC Carboxy terminal end of RaPLR1 has a covalently bound ligand binding
 CC moiety, which can be a LL2 antibody directed against CD22 on cancerous B
 CC cells or human chorionic gonadotropin (hCG) effective against Kaposi's
 CC Sarcoma cells. Recombinant ribonucleases can be expressed in bacteria
 CC without an N-terminal methionine due to the presence of a signal peptide
 CC that is cleaved by bacteria. The soluble expression of ribonuclease
 CC allows the proteins to be fused in-frame with ligand binding moieties to
 CC form cytotoxic fusion proteins. They can be used for treatment of cancer
 CC and autoimmune diseases
 XX Sequence 104 AA;
 SQ

Query Match	99.1%;	Score 578;	DB 2;	Length 104;
Best Local Similarity	100.0%;	Pred.No. 4.4e-62;		
Matches 104;	Conservative 0;	Mismatches 0;	Indels 0;	Gaps 0;
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Qy	62	SEFYLSDCNVTSRCKYKLLKSTNTFCVTCENQAPVHFVGVGHC	105	
Db	61	SEFYLSDCNVTSRCKYKLLKSTNTFCVTCENQAPVHFVGVGHC	104	

RESULT 4	
AA28871	AA28871 standard; protein; 105 AA.
XX AC	
XX AC	AA28871;
XX DT	25-JAN-2000 (first entry)
XX XX	
XX DE	Recombinant Met (-1) RaPLR1 Gln1Ser amino acid sequence.
XX XX	
XX KW	Recombinant Met (-1) Rana pipiens ribonuclease Gln1Ser; RaPLR1; CD22;
XX KW	covalently bound; LL2 antibody; ligand binding moiety; cancerous B cell;
XX KW	Kaposi's sarcoma; human chorionic gonadotrophin; hCG; signal peptide;
XX KW	recombinant ribonuclease; cytotoxic fusion protein; cancer; frog;
XX KW	autoimmune disease; RNase.
XX XX	
XX OS	Rana pipiens.
XX OS	Synthetic.
XX XX	
XX FH	Key Location/Qualifiers
XX FT	Misc-difference 1
XX FT	/note= "Met not found in wild type RaPLR1"
XX FT	Misc-difference 2
XX FT	/note= "wild type Gln replaced with Ser"
XX XX	
XX PN	WO9950398-A2.
XX XX	
XX PD	07-OCT-1999.
XX XX	
XX PF	26-MAR-1999; 99WO-US006641.
XX XX	
XX PR	27-MAR-1998; 98US-0079751P.
XX XX	
XX PA	(USSH) US DEPT HEALTH & HUMAN SERVICES.
XX PI	Rybak SM, Newton DL;
XX XX	
XX DR	WPI; 1999-610847/52.
XX DR	N-PSDB; AA208129.
XX PT	
XX PT	New recombinant ribonucleases, used for killing target cells, e.g. for
XX PT	treating cancers, viral infections or autoimmune diseases.
XX PS	Claim 34; Page 61; 71pp; English.
XX XX	
XX CC	The present sequence is a recombinant Rana pipiens ribonuclease (RaPLR1)
XX CC	protein with Met at position 1 and Gln2Ser. Carboxy terminal end of
XX CC	recombinant RaPLR1 has a covalently bound ligand binding moiety, which
XX CC	can be a LL2 antibody directed against CD22 on cancerous B cells or human
XX CC	chorionic gonadotrophin (hCG) effective against Kaposi's sarcoma cells.
XX CC	Recombinant ribonucleases can be expressed in bacteria without an N-
XX CC	terminal methionine due to the presence of a signal peptide that is
XX CC	cleaved by bacteria. The soluble expression of ribonuclease allows the
XX CC	proteins to be fused in-frame with ligand binding moieties to form
XX CC	cytotoxic fusion proteins. They can be used for treatment of cancer and
XX CC	autoimmune diseases
XX SQ	Sequence 105 AA;

Query Match 99.1%; Score 578; DB 2; Length 105;

	Best Local Similarity	99.0%; Pred. No.	4.5e-62;	Mismatches	1;	Indels	0;	Gaps	0;
	Matches	104;	Conservative	0;					
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Dd	1	MSDWLTTFQKKHLTNTRDVCNINMSTNLPHCKDKNTFIYSRPEVKAICGIIASKNVLT	60						
QY	61	TSEPYLSDCNVTSPPCKYKUKSTNTTCVTCENQAPVHFVGVGHC	105						
Dd	61	TSEPYLSDCNVTSPPCKYKUKSTNTTCVTCENQAPVHFVGVGHC	105						

RESULT 5	
AAZ28879	
ID	AAZ28879 standard; protein; 127 AA.
XX	
AC	AAZ28879;
XX	
DT	25-JAN-2000 (first entry)
XX	
DE	Rana pipiens Clone 5a1b ribonuclease.
XX	
KW	Rana pipiens ribonuclease Clone 5a1b; RAPLr1; covalently bound; RNase;
KW	LL2 antibody; ligand binding moiety; CD22; cancerous B cell; onconase;
KW	Kaposi's Sarcoma; human chorionic gonadotropin; hCG; cancer;
KW	recombinant ribonuclease; frog; signal peptide; cytotoxic fusion protein
KW	autoimmune disease.
XX	
OS	Rana pipiens.
XX	
FH	Key
FT	Location/Qualifiers
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FT	/label= Signal_peptide
FT	/note= "Putative"
FT	24..127
FT	/label= Rana_pipiens_Clone_5a1b_ribonuclease
FT	
XX	
FN	WO9950398-A2.
XX	
PD	07-OCT-1999.
XX	
PF	26-MAR-1999; 99WO-US006641.
XX	
PR	27-MAR-1998; 98US-0079751P.
XX	
PA	(USSH) US DEPT HEALTH & HUMAN SERVICES.
XX	
PI	Rybak SM, Newton DL;
XX	
DR	WPI; 1999-610847/52.
DR	N-FSDB; AAZ08136.
XX	
PT	New recombinant ribonucleases, used for killing target cells, e.g. for
PT	treating cancers, viral infections or autoimmune diseases.
XX	
PS	Disclosure; Page 69; 71pp; English.
XX	
CC	The present sequence is a Rana pipiens Clone 5a1b ribonuclease (RAPLr1).
CC	It is encoded by Clone 5a1b cDNA obtained from Rana pipiens liver mRNA
CC	library. It exhibits differences with Onconase (RNM) at amino acid
CC	residues 11, 20, 85 and 103. Carboxy terminal end of RAPLr1 has a
CC	covalently bound ligand binding moiety, which can be a LL2 antibody
CC	directed against CD22 on cancerous B cells or human chorionic
CC	gonadotropin (hCG) effective against Kaposi's Sarcoma cells. Recombinant
CC	ribonucleases can be expressed in bacteria without an N-terminal
CC	methionine due to the presence of a signal peptide that is cleaved by
CC	bacteria. The soluble expression of ribonuclease allows the proteins to
CC	be fused in-frame with ligand binding moieties to form cytotoxic fusion
CC	proteins. They can be used for treatment of cancer and autoimmune
CC	diseases
XX	
SQ	Sequence 127 AA;
XX	

Sequence 127 AA;

Query Match 99.1%; Score 578; DB 2; Length 127;
Best Local Similarity 100.0%; Pred. No. 5.7e-62;
Matches 104; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 2 QDWLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 61
DB 24 QDWLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 83

QY 62 SEFYLSDCNVTSPCKYKLLKKSNTFCVTCENQAPVHFVGVGHC 105
DB 84 SEFYLSDCNVTSPCKYKLLKKSNTFCVTCENQAPVHFVGVGHC 127

RESULT 6
AAY28866
ID AAY28866 standard; protein; 104 AA.
XX
AC AAY28866;
XX
DT 25-JAN-2000 (first entry)
XX
DE Recombinant RaPLR1 Met23Leu amino acid sequence.
XX
KW Recombinant Rana pipiens ribonuclease; RaPLR1 Met23Leu; covalently bound;
KW LL2 antibody; ligand binding moiety; CD22; cancerous B cell; RNase;
KW Kaposi's sarcoma; human chorionic gonadotrophin; hCG; signal peptide;
KW recombinant ribonuclease; cytotoxic fusion protein; cancer; frog;
KW autoimmune disease.
XX
OS Rana pipiens.
OS Synthetic.
XX
FH Key Location/Qualifiers
FT Misc-difference 23 /note= "Wild type Met replaced with Leu"
FT
XX
XX W09950398-A2.
XX
XX 07-OCT-1999.
XX
XX 26-MAR-1999; 99WO-US006641.
XX
XX 27-MAR-1998; 98US-0079751P.
XX
XX (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
XX Rybak SM, Newton DL;
XX
XX WPI; 1999-610847/52.
XX
XX N-PSDB; AAZ08125.
XX
XX New recombinant ribonucleases, used for killing target cells, e.g. for
XX treating cancers, viral infections or autoimmune diseases.
XX
XX Claim 34; Page 56; 7lpp; English.
XX
XX The present sequence is a recombinant Rana pipiens ribonuclease (RaPLR1)
XX protein with Met23Leu. Carboxy terminal end of recombinant RaPLR1 has a
XX covalently bound ligand binding moiety, which can be a LL2 antibody
XX directed against CD22 on cancerous B cells or human chorionic
XX gonadotrophin (hCG) effective against Kaposi's sarcoma cells. Recombinant
XX ribonucleases can be expressed in bacteria without an N-terminal
XX methionine due to the presence of a signal peptide that is cleaved by
XX bacteria. The soluble expression of ribonuclease allows the proteins to
XX be fused in-frame with ligand binding moieties to form cytotoxic fusion
XX proteins. They can be used for treatment of cancer and autoimmune
XX diseases
XX
XX Sequence 104 AA;
XX
XX Query Match 98.6%; Score 575; DB 2; Length 104;
XX Best Local Similarity 99.0%; Pred. No. 1e-61;
XX Matches 103; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

QY 2 QDWLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 61
DB 1 QDWLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 60

QY 62 SEFYLSDCNVTSPCKYKLLKKSNTFCVTCENQAPVHFVGVGHC 105
DB 61 SEFYLSDCNVTSPCKYKLLKKSNTFCVTCENQAPVHFVGVGHC 104

RESULT 7
AAY28870
ID AAY28870 standard; protein; 104 AA.
XX
AC AAY28870;
XX
DT 25-JAN-2000 (first entry)
XX
DE Recombinant RaPLR1 Gln1Ser amino acid sequence.
XX
KW Recombinant Rana pipiens ribonuclease; RaPLR1 Gln1Ser; covalently bound;
KW LL2 antibody; ligand binding moiety; CD22; cancerous B cell; frog;
KW Kaposi's sarcoma; human chorionic gonadotrophin; hCG; signal peptide;
KW recombinant ribonuclease; cytotoxic fusion protein; cancer; RNase;
KW autoimmune disease.
XX
OS Rana pipiens.
OS Synthetic.
XX
FH Key Location/Qualifiers
FT Misc-difference 1 /note= "Wild type Gln replaced with Ser"
FT
XX
XX W09950398-A2.
XX
XX 07-OCT-1999.
XX
XX 26-MAR-1999; 99WO-US006641.
XX
XX 27-MAR-1998; 98US-0079751P.
XX
XX (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
XX Rybak SM, Newton DL;
XX
XX WPI; 1999-610847/52.
XX
XX N-PSDB; AAZ08125.
XX
XX New recombinant ribonucleases, used for killing target cells, e.g. for
XX treating cancers, viral infections or autoimmune diseases.
XX
XX Claim 34; Page 60; 7lpp; English.
XX
XX The present sequence is a recombinant Rana pipiens ribonuclease (RaPLR1)
XX protein with Gln1Ser. Carboxy terminal end of recombinant RaPLR1 has a
XX covalently bound ligand binding moiety, which can be a LL2 antibody
XX directed against CD22 on cancerous B cells or human chorionic
XX gonadotrophin (hCG) effective against Kaposi's sarcoma cells. Recombinant
XX ribonucleases can be expressed in bacteria without an N-terminal
XX methionine due to the presence of a signal peptide that is cleaved by
XX bacteria. The soluble expression of ribonuclease allows the proteins to
XX be fused in-frame with ligand binding moieties to form cytotoxic fusion
XX proteins. They can be used for treatment of cancer and autoimmune
XX diseases
XX
XX Sequence 104 AA;
XX
XX Query Match 98.3%; Score 573; DB 2; Length 104;
XX Best Local Similarity 100.0%; Pred. No. 1.8e-61;
XX Matches 103; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 3 DWLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 62
|||||

XX 11-MAR-1998; 98US-0077557P.
 PR (IMMU-) IMMUNOMEDICS INC.
 XX Goldenberg DM, Hansen H, Leung S;
 XX WPI; 1999-551416/46.
 DR N-PSDB; AAZ19767.
 XX A new recombinant Onconase used to treat, e.g. colon cancer.
 PT Example 1; Fig 1; 42pp; English.
 PS
 XX This sequence represents recombinant frog Onconase. Onconase has
 CC ribonuclease and anti-tumour activity. The cDNA was produced via PCR
 CC (using primers AAZ19768-219769) of two synthetic DNAs whose sequences
 CC encoded most of the N-terminal or the C-terminal amino acids of mature
 CC Onconase. The two PCR products generated encoded either the N-terminal 54
 CC amino acids (minus the initial methionine) or the C-terminal 51 amino
 CC acids, and were ligated in frame at an NruI site. The cDNA was then
 CC subcloned into a vector e.g., pBluescript, where the ATG initiation codon
 CC was ligated to the cDNA. After expression in E. coli, the recombinant
 CC protein was purified. The initial N-formyl methionine was cleaved off and
 CC the now N-terminal glutamate residue cyclised to form an N-terminal
 CC pyroglutamate. The pyroglutamate residue forms part of the phosphate
 CC binding pocket of Onconase and is essential for both ribonuclease and anti
 CC -tumour activity. Onconase is a 12 kb ribonuclease which causes cell
 CC death as a result of potent inhibition of protein synthesis by a
 CC mechanism involving inactivation of cellular RNA. It is not inhibited by
 CC mammalian placental ribonuclease inhibitor, which may explain its
 CC enhanced cytotoxicity relative to mammalian enzymes. It has anti-tumour
 CC activity against a variety of solid tumours e.g. colon or pancreatic
 CC cancers, and can be used alone or in combination with other anti-cancer
 CC agents such as tamoxifen. When used as an anti-tumour agent, Onconase can
 CC be conjugated to a marker which targets it to a specific cell type
 XX Sequence 105 AA;
 SQ
 Query Match 95.7%; Score 558; DB 2; Length 105;
 Best Local Similarity 95.2%; Pred. No. 1.2e-59;
 Matches 100; Conservative 3; Mismatches 2; Indels 0; Gaps 0;
 QY 1 MQDWLTFQKKHLNTRDVCNINMSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 60
 DB 1 MQDWLTFQKKHITNTRDVCNINMSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 60
 QY 61 TSEFYLSDCNVTSPCKYKLLKSKTNTFCVTCENQAPVHFVGVGHC 105
 DB 61 TSEFYLSDCNVTSPCKYKLLKSKTNTFCVTCENQAPVHFVGVGSC 105
 RESULT 11
 AAW35125
 ID AAW35125 standard; protein; 355 AA.
 AC AAW35125;
 XX 20-APR-1998 (first entry)
 DT R. pipiens recombinant RNase rOnc fusion protein 1.
 DE RNase A; ribonuclease; cytotoxic; onconase; rOnc; immunofusion;
 KW tumour cell growth; frog.
 XX Rana pipiens.
 OS Synthetic.
 XX WO9731116-A2.
 FN 28-AUG-1997.
 PD 19-FEB-1997; 97WO-US002588.
 PF

XX 21-FEB-1996; 96US-0011800P.
 PR (USSH) US DEPT HEALTH & HUMAN SERVICES.
 XX Rybak SM, Newton DL, Boque L, Wlodawer A;
 PI WPI; 1997-435168/40.
 DR N-PSDB; AAT94963.
 XX Ribonuclease molecules based on native Onconase - used for killing cells,
 PT particularly tumour cells.
 XX Disclosure; Page 67; 90pp; English.
 PS
 XX Sequences AAW35125 to AAW35135 represent recombinant fusion proteins
 CC (rOnc) which are modifications of the RNase Onconase (RTM) (nOnc). Such
 CC novel ribonuclease molecules are highly cytotoxic and can be used alone
 CC or to form chemical conjugates or to target recombinant immunofusions.
 CC They are used particularly for decreasing tumour cell growth. They can
 CC also be used for cell separation in vitro by selectively killing unwanted
 CC types of cells, e.g. in bone marrow prior to transplantation into a
 CC patient undergoing marrow ablation by radiation, or for killing leukaemia
 CC cells or T-cells that would cause graft versus host disease. The toxins
 CC can also be used to selectively kill unwanted cells in culture. The new
 CC ribonucleases have increased cytotoxic activity compared to nOnc and also
 CC lower immunogenicity in humans
 XX Sequence 355 AA;
 SQ
 Query Match 95.7%; Score 558; DB 2; Length 355;
 Best Local Similarity 95.2%; Pred. No. 5.8e-59;
 Matches 100; Conservative 3; Mismatches 2; Indels 0; Gaps 0;
 QY 1 MQDWLTFQKKHLNTRDVCNINMSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 60
 DB 251 MEDWLTFOKKHITNTRDVCNINMSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 310
 QY 61 TSEFYLSDCNVTSPCKYKLLKSKTNTFCVTCENQAPVHFVGVGHC 105
 DB 311 TSEFYLSDCNVTSPCKYKLLKSKTNTFCVTCENQAPVHFVGVGSC 355
 RESULT 12
 AAW35130
 ID AAW35130 standard; protein; 358 AA.
 XX AAW35130;
 XX 20-APR-1998 (first entry)
 DT R. pipiens recombinant RNase rOnc fusion protein 6.
 DE RNase A; ribonuclease; cytotoxic; onconase; rOnc; immunofusion;
 KW tumour cell growth; frog.
 XX Rana pipiens.
 OS Synthetic.
 XX WO9731116-A2.
 FN 28-AUG-1997.
 PD 19-FEB-1997; 97WO-US002588.
 PF 21-FEB-1996; 96US-0011800P.
 XX (USSH) US DEPT HEALTH & HUMAN SERVICES.
 XX Rybak SM, Newton DL, Boque L, Wlodawer A;
 XX WPI; 1997-435168/40.
 DR N-PSDB; AAT94968.
 DR

Db 1 QDWLTFQKHITNTRDVCNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLTT 60
QY 62 SEFYLSDCNVTSRPCKYKLKSKTNTFCVTCENQAPVHFVGVGHC 105
Db 61 SEFYLSDCNVTSRPCKYKLKSKTNTFCVTCENQAPVHFVGVGSC 104

RESULT 15
ABG32650
ID ABG32650 standard; protein; 104 AA.
XX AC ABG32650;
XX DT 15-NOV-2002 (first entry)
XX Northern leopard frog ranpirnase protein.
XX Northern leopard frog; ranpirnase; site-directed mutation; ribonuclease.
XX OS Rana pipiens.
XX PN US6423515-B1.
XX PD 23-JUL-2002.
XX PF 14-OCT-2000; 2000US-00687748.
XX PR 10-SEP-1999; 99US-00394268.
XX PA (ALFA-) ALFACELL CORP.
XX PI Saxena SK;
XX WPI; 2002-664633/71.

XX Constructing isolated nucleic acid encoding ribonuclease, by subjecting
PT desired recombinant plasmid DNA to different site-directed mutations to
PT produce nucleic acid, using different polymerase chain reaction
PT protocols.
XX Claim 1; Col 5-6; 8pp; English.
XX The present invention relates to a new method of constructing isolated
CC nucleic acid encoding ribonuclease protein with N-terminal Met at
CC position -1 and Glu at position 1, where its Met has been cleaved and its
CC Glu has been autocyclised. The method of the invention involves
CC subjecting pET11d-rOnc(Q1,M23L) plasmid DNA to two different site-
CC directed mutations, each using overlapping PCR protocol. The method is
CC useful for constructing an isolated nucleic acid encoding the
CC ribonuclease. The present amino acid sequence represents the northern
CC leopard frog ranpirnase protein of the invention
XX Sequence 104 AA;
SQ

Query Match 95.4%; Score 556; DB 5; Length 104;
Best Local Similarity 96.2%; Pred. No. 2.1e-59;
Matches 100; Conservative 2; Mismatches 2; Indels 0; Gaps 0;
QY 2 QDWLTFQKHITNTRDVCNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLTT 61
Db 1 QDWLTFQKHITNTRDVCNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLTT 60
QY 62 SEFYLSDCNVTSRPCKYKLKSKTNTFCVTCENQAPVHFVGVGHC 105
Db 61 SEFYLSDCNVTSRPCKYKLKSKTNTFCVTCENQAPVHFVGVGSC 104

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OM protein - protein search, using sw model

Run on: May 7, 2004, 21:28:45 ; Search time 12.1796 Seconds
(without alignments)
445.066 Million cell updates/sec

Title: US-09-961-400-6

Perfect score: 583

Sequence: 1. MQDWLTFQKHLTNRDVC.....TFCVTCENQAPVHFVGVGHC 105

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 389414 seqs, 51625971 residues

Total number of hits satisfying chosen parameters: 389414

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Listing first 45 summaries

Database : Issued Patents AA:*

- 1: /cgn2_6/prodata/2/iaa/5A COMB.pep:*
- 2: /cgn2_6/prodata/2/iaa/5B COMB.pep:*
- 3: /cgn2_6/prodata/2/iaa/6A COMB.pep:*
- 4: /cgn2_6/prodata/2/iaa/6B COMB.pep:*
- 5: /cgn2_6/prodata/2/iaa/PCTUS COMB.pep:*
- 6: /cgn2_6/prodata/2/iaa/backfiles1.pep:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	558	95.7	104	1	US-08-467-955-2
2	558	95.7	105	3	US-08-875-811-39
3	558	95.7	355	3	US-08-875-811-41
4	558	95.7	358	3	US-08-875-811-51
5	556	95.4	104	3	US-09-394-268-1
6	556	95.4	104	4	US-09-687-748-1
7	556	95.4	104	4	US-08-626-288-1
8	556	95.4	112	3	US-09-095-429-1
9	556	95.4	129	3	US-08-875-811-32
10	556	95.4	251	3	US-08-875-811-59
11	556	95.4	251	3	US-08-875-811-61
12	556	95.4	355	3	US-08-875-811-49
13	556	95.4	355	3	US-08-875-811-57
14	556	95.4	355	3	US-08-875-811-64
15	556	95.4	366	3	US-08-875-811-55
16	556	95.4	379	3	US-08-875-811-43
17	553	94.9	104	1	US-08-875-811-41
18	553	94.9	104	1	US-07-921-619-1
19	553	94.9	104	1	US-08-467-955-1
20	553	94.9	104	2	US-08-875-811-13
21	551	94.5	104	3	US-08-875-811-1
22	551	94.5	104	3	US-09-071-672-1
23	551	94.5	104	4	US-09-986-119-1
24	551	94.5	105	3	US-08-875-811-26
25	551	94.5	106	3	US-08-875-811-28
26	551	94.5	107	3	US-08-875-811-30
27	551	94.5	107	3	US-08-875-811-30

28	550	94.3	105	3	US-08-875-811-24	Sequence 24, Appl
29	548	94.0	104	3	US-09-394-268-2	Sequence 2, Appl
30	548	94.0	104	4	US-09-687-748-2	Sequence 2, Appl
31	548	94.0	104	4	US-08-626-288-2	Sequence 2, Appl
32	548	94.0	104	4	US-09-095-429-2	Sequence 2, Appl
33	547	93.8	358	3	US-08-875-811-45	Sequence 45, Appl
34	547	93.8	365	3	US-08-875-811-53	Sequence 53, Appl
35	528	90.6	107	3	US-08-875-811-20	Sequence 20, Appl
36	495	84.9	360	3	US-08-875-811-47	Sequence 47, Appl
37	483.5	82.9	111	3	US-08-875-811-22	Sequence 22, Appl
38	445	76.3	83	3	US-08-875-811-2	Sequence 2, Appl
39	445	76.3	83	4	US-09-071-672-3	Sequence 3, Appl
40	445	76.3	83	4	US-09-986-119-3	Sequence 3, Appl
41	289	49.6	111	2	US-08-891-848-12	Sequence 12, Appl
42	289	49.6	111	3	US-08-875-811-8	Sequence 8, Appl
43	217.5	37.3	114	3	US-09-223-118-4	Sequence 4, Appl
44	205.5	35.2	114	3	US-09-223-118-2	Sequence 2, Appl
45	204.5	35.1	114	3	US-09-223-118-1	Sequence 1, Appl

ALIGNMENTS

RESULT 1

US-08-467-955-2
; Sequence 2, Application US/08467955
; Patent No. 5728805
; GENERAL INFORMATION:
; APPLICANT: Ardelt Ph.D, Wojciech J.

; TITLE OF INVENTION: PHARMACEUTICALS AND METHOD FOR MAKING THEM

; NUMBER OF SEQUENCES: 2

; CORRESPONDENCE ADDRESS:

; ADDRESSEE: Mark H. Jay, P.A.

; STREET: P.O. Box E

; CITY: Short Hills

; STATE: New Jersey

; COUNTRY: USA

; ZIP: 07078-0383

; COMPUTER READABLE FORM:

; MEDIUM TYPE: Floppy disk

; COMPUTER: IBM PC compatible

; OPERATING SYSTEM: PC-DOS/MS-DOS

; SOFTWARE: Patent In Release #1.24

; CURRENT APPLICATION DATA:

; APPLICATION NUMBER: US/08/467,955

; FILING DATE:

; CLASSIFICATION: 435

; PRIOR APPLICATION DATA:

; APPLICATION NUMBER: US 07/178,118

; FILING DATE: 06-APR-1988

; PRIOR APPLICATION DATA:

; APPLICATION NUMBER: US 07/436,141

; FILING DATE: 13-NOV-1989

; PRIOR APPLICATION DATA:

; APPLICATION NUMBER: US 07/814,332

; FILING DATE: 03-FEB-1992

; PRIOR APPLICATION DATA:

; APPLICATION NUMBER: US 08/283,970

; FILING DATE: 01-AUG-1994

; ATTORNEY/AGENT INFORMATION:

; NAME: Jay, Mark H.

; REGISTRATION NUMBER: 27507

; REFERENCE/DOCKET NUMBER: 5007 US

; TELECOMMUNICATION INFORMATION:

; TELEPHONE: 201-912-9066

; TELEFAX: 201-912-0442

; TELEX: No. 5728805 Applicable

; INFORMATION FOR SEQ ID NO: 2:

; SEQUENCE CHARACTERISTICS:

; LENGTH: 104 amino acids

; TYPE: amino acid

; STRANDEDNESS: single

; TOPOLOGY: linear

```
; MOLECULE TYPE: protein
; HYPOTHETICAL: N
; ANTI-SENSE: N
; FRAGMENT TYPE: N-terminal
; ORIGINAL SOURCE:
; ORGANISM: Rana pipiens
; DEVELOPMENTAL STAGE: Oocyte
US-08-467-955-2

Query Match          95.7%; Score 558; DB 1; Length 104;
Best Local Similarity 96.2%; Pred. No. 2.1e-60;
Matches 100; Conservative 2; Mismatches 0; Indels 0; Gaps 0;

QY 2 QDWLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 61
Db 1 EDWLTFQKKHVTNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 60

QY 62 SEFYLSDCNVTSRPCKYKLLKSKTNTFCVTCENQAPVHFVGVGHC 105
Db 61 SEFYLSDCNVTSRPCKYKLLKSKTNTFCVTCENQAPVHFVGVGHC 104

RESULT 2
US-08-875-811-39
; Sequence 39, Application US/08875811
; Patent No. 6045793
; GENERAL INFORMATION:
; APPLICANT: Rybak, Susanna M.
; APPLICANT: Newton, Dianne L.
; APPLICANT: Boque, Lluís
; APPLICANT: Wlodawer, Alexander
; TITLE OF INVENTION: Recombinant Ribonuclease Proteins
; NUMBER OF SEQUENCES: 64
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Townsend and Townsend and Crew LLP
; STREET: Two Embarcadero Center, Eighth Floor
; CITY: San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94111-3834
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent In Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; FILING DATE: 19-FEB-1998
; APPLICATION NUMBER: US/08/875,811
; PRIORITY DATE: 19-FEB-1998
; PRIOR APPLICATION NUMBER: WO PCT/US97/02588
; FILING DATE: 19-FEB-1997
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 60/011,800
; FILING DATE: 21-FEB-1996
; ATTORNEY/AGENT INFORMATION:
; NAME: Faris, Susan K.
; REGISTRATION NUMBER: 41,739
; REFERENCE/DOCKET NUMBER: 015280-244100US
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (415) 576-0200
; TELEFAX: (415) 576-0300
; INFORMATION FOR SEQ ID NO: 39:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 105 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: protein
; US-08-875-811-39

Query Match          95.7%; Score 558; DB 3; Length 105;
Best Local Similarity 95.2%; Pred. No. 2.1e-60;
Matches 100; Conservative 3; Mismatches 2; Indels 0; Gaps 0;

US-08-875-811-51
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QY 1 MODWLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 60
Db 1 MEDWLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 60

QY 61 TSEFYLSDCNVTSRPCKYKLLKSKTNTFCVTCENQAPVHFVGVGHC 105
Db 61 TSEFYLSDCNVTSRPCKYKLLKSKTNTFCVTCENQAPVHFVGVGSC 105
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RESULT 3
US-08-875-811-41
; Sequence 41, Application US/08875811
; Patent No. 6045793
; GENERAL INFORMATION:
; APPLICANT: Rybak, Susanna M.
; APPLICANT: Newton, Dianne L.
; APPLICANT: Boque, Lluís
; APPLICANT: Wlodawer, Alexander
; TITLE OF INVENTION: Recombinant Ribonuclease Proteins
; NUMBER OF SEQUENCES: 64
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Townsend and Townsend and Crew LLP
; STREET: Two Embarcadero Center, Eighth Floor
; CITY: San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94111-3834
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent In Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/875,811
; FILING DATE: 19-FEB-1998
; CLASSIFICATION: 435
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: WO PCT/US97/02588
; FILING DATE: 19-FEB-1997
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 60/011,800
; FILING DATE: 21-FEB-1996
; ATTORNEY/AGENT INFORMATION:
; NAME: Faris, Susan K.
; REGISTRATION NUMBER: 41,739
; REFERENCE/DOCKET NUMBER: 015280-244100US
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (415) 576-0200
; TELEFAX: (415) 576-0300
; INFORMATION FOR SEQ ID NO: 41:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 355 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: protein
; US-08-875-811-41

Query Match          95.7%; Score 558; DB 3; Length 355;
Best Local Similarity 95.2%; Pred. No. 1e-59;
Matches 100; Conservative 3; Mismatches 2; Indels 0; Gaps 0;
```

```
QY 1 MODWLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 60
Db 251 MEDWLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 310

QY 61 TSEFYLSDCNVTSRPCKYKLLKSKTNTFCVTCENQAPVHFVGVGHC 105
Db 311 TSEFYLSDCNVTSRPCKYKLLKSKTNTFCVTCENQAPVHFVGVGSC 355
```

```
RESULT 4
US-08-875-811-51
```

```
; Sequence 51, Application US/08875811
; Patent No. 6045793
; GENERAL INFORMATION:
; APPLICANT: Rybak, Susanna M.
; APPLICANT: Newton, Dianne L.
; APPLICANT: Boque, Lluís
; APPLICANT: Wlodawer, Alexander
; TITLE OF INVENTION: Recombinant Ribonuclease Proteins
; NUMBER OF SEQUENCES: 64
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Townsend and Townsend and Crew LLP
; STREET: Two Embarcadero Center, Eighth Floor
; CITY: San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94111-3834
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/875,811
; FILING DATE: 19-FEB-1998
; CLASSIFICATION: 435
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: WO PCT/US97/02588
; FILING DATE: 19-FEB-1997
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 60/011,800
; FILING DATE: 21-FEB-1996
; ATTORNEY/AGENT INFORMATION:
; NAME: Paris, Susan K.
; REGISTRATION NUMBER: 41,739
; REFERENCE/DOCKET NUMBER: 015280-244100US
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (415) 576-0200
; TELEFAX: (415) 576-0300
; INFORMATION FOR SEQ ID NO: 51:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 358 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: protein
; US-08-875-811-51

Query Match          95.7%; Score 558; DB 3; Length 358;
Best Local Similarity 95.2%; Pred. No. 1e-59;
Matches 100; Conservative 3; Mismatches 2; Indels 0; Gaps 0;

QY 1 QDWLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 60
Db 1 MEDWLTQKKHITNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 60

QY 61 TSEFYLSDCNVTSRPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 105
Db 61 TSEFYLSDCNVTSRPCKYKLLKSTNTFCVTCENQAPVHFVGVGSC 105

RESULT 5
US-09-394-268-1
; Sequence 1, Application US/09394268
; Patent No. 6175003
; GENERAL INFORMATION:
; APPLICANT: Saxena, Shalendra K
; TITLE OF INVENTION: NUCLEIC ACIDS ENCODING RIBONUCLEASES AND METHODS OF
; FILE REFERENCE: 5013
; CURRENT APPLICATION NUMBER: US/09/394,268
; CURRENT FILING DATE: 1999-09-10
; NUMBER OF SEQ ID NOS: 8
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 1

Query Match          95.4%; Score 556; DB 3; Length 104;
Best Local Similarity 96.2%; Pred. No. 3.6e-60;
Matches 100; Conservative 2; Mismatches 2; Indels 0; Gaps 0;

QY 2 QDWLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 61
Db 1 QDWLTFQKKHITNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 60

QY 62 SEFYLSDCNVTSRPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 105
Db 61 SEFYLSDCNVTSRPCKYKLLKSTNTFCVTCENQAPVHFVGVGSC 104

RESULT 6
US-09-687-748-1
; Sequence 1, Application US/09687748
; Patent No. 6423515
; GENERAL INFORMATION:
; APPLICANT: Saxena, Shalendra K
; TITLE OF INVENTION: METHODS OF MAKING NUCLEIC ACIDS ENCODING RIBONUCLEASES
; FILE REFERENCE: 5013 US 01
; CURRENT APPLICATION NUMBER: US/09/687,748
; CURRENT FILING DATE: 2000-10-14
; PRIOR APPLICATION NUMBER: 09/394,268
; PRIOR FILING DATE: 1999-09-10
; NUMBER OF SEQ ID NOS: 8
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 1
; LENGTH: 104
; TYPE: PRT
; ORGANISM: Rana pipiens
; US-09-687-748-1

Query Match          95.4%; Score 556; DB 4; Length 104;
Best Local Similarity 96.2%; Pred. No. 3.6e-60;
Matches 100; Conservative 2; Mismatches 2; Indels 0; Gaps 0;

QY 2 QDWLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 61
Db 1 QDWLTFQKKHITNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 60

QY 62 SEFYLSDCNVTSRPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 105
Db 61 SEFYLSDCNVTSRPCKYKLLKSTNTFCVTCENQAPVHFVGVGSC 104

RESULT 7
US-08-626-288-1
; Sequence 1, Application US/08626288
; Patent No. 6649392
; GENERAL INFORMATION:
; APPLICANT: Youle, Richard
; APPLICANT: Vasandani, Veena
; APPLICANT: Wu, Yon-Neng
; APPLICANT: Boix, Ester
; APPLICANT: Ardelet, Wojciech
; TITLE OF INVENTION: A Mutant Form of Cytotoxic Protein Which
; TITLE OF INVENTION: Allows Production by Recombinant Methods
; NUMBER OF SEQUENCES: 3
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Townsend and Townsend and Crew
; STREET: One Market Plaza, Steuart Street Tower
; CITY: San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94105-1492
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
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; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent In Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/626,288
; FILING DATE: No. 6649392 yet assigned
; CLASSIFICATION: 530
; ATTORNEY/AGENT INFORMATION:
; NAME: Ran, David B.
; REGISTRATION NUMBER: 38,589
; REFERENCE/DOCKET NUMBER: 15280-267
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (415) 543-9600
; TELEFAX: (415) 543-5043
; INFORMATION FOR SEQ ID NO: 1:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 104 amino acids
; TYPE: amino acid
; STRANDEDNESS:
; TOPOLOGY: linear
; MOLECULE TYPE: protein
; US-08-626-288-1
;
; Query Match 95.4%; Score 556; DB 4; Length 104;
; Best Local Similarity 96.2%; Pred. No. 3.6e-60;
; Matches 100; Conservative 2; Mismatches 2; Indels 0; Gaps 0;
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QY 2 QDWLTQKXHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLTT 61
Db 1 QDWLTQKXHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLTT 60
;
QY 62 SEFYLSDCNVTSPCKYKLLKSKNTFCVTCENQAPVHFVGVGHC 105
Db 61 SEFYLSDCNVTSPCKYKLLKSKNTFCVTCENQAPVHFVGVGSC 104
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; RESULT 8
; US-09-429-1
; Sequence 1, Application US/09095429
; Patent No. 6649393
; GENERAL INFORMATION:
; APPLICANT: Youle, Richard
; APPLICANT: Vasandani, Veena
; APPLICANT: Wu, Yon-Neng
; APPLICANT: Boix, Ester
; APPLICANT: Argelt, Wojetech
; TITLE OF INVENTION: A Mutant Form of Cytotoxic Protein Which
; TITLE OF INVENTION: Allows Production by Recombinant Methods
; NUMBER OF SEQUENCES: 3
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Townsend and Townsend and Crew
; STREET: One Market Plaza, Steuart Street Tower
; CITY: San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94105-1492
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent In Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/09/095,429
; FILING DATE:
; CLASSIFICATION:
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: 08/626,288
; FILING DATE:
; ATTORNEY/AGENT INFORMATION:
; NAME: Ran, David B.
; REGISTRATION NUMBER: 38,589
; REFERENCE/DOCKET NUMBER: 15280-267
; TELECOMMUNICATION INFORMATION:
;
; Query Match 95.4%; Score 556; DB 3; Length 112;
; US-08-875-811-32
; Sequence 32, Application US/08875811
; Patent No. 6045793
; GENERAL INFORMATION:
; APPLICANT: Rybak, Susanna M.
; APPLICANT: Newton, Dianne L.
; APPLICANT: Bogue, Lluís
; APPLICANT: Wlodawer, Alexander
; TITLE OF INVENTION: Recombinant Ribonuclease Proteins
; NUMBER OF SEQUENCES: 64
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Townsend and Townsend and Crew LLP
; STREET: Two Embarcadero Center, Eighth Floor
; CITY: San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94111-3834
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent In Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/875,811
; FILING DATE: 19-FEB-1998
; CLASSIFICATION: 435
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: WO PCT/US97/02588
; FILING DATE: 19-FEB-1997
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 60/011,800
; FILING DATE: 21-FEB-1996
; ATTORNEY/AGENT INFORMATION:
; NAME: Faris, Susan K.
; REGISTRATION NUMBER: 41,739
; REFERENCE/DOCKET NUMBER: 015280-244100US
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (415) 576-0200
; TELEFAX: (415) 576-0300
; INFORMATION FOR SEQ ID NO: 32:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 112 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: protein
; US-08-875-811-32
;
; Query Match 95.4%; Score 556; DB 3; Length 112;

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Best Local Similarity 95.2%; Pred. No. 4e-60;
Matches 100; Conservative 2; Mismatches 3; Indels 0; Gaps 0;

QY 1 MDWLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPPVKAICKGIIASKNNVLT 60
Db 8 MSDWLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPPVKAICKGIIASKNNVLT 67
QY 61 TSEFYSDCNVTSRCPCKYKLKSTNFCVTCENQAPVHFVGVGHC 105
Db 68 TSEFYSDCNVTSRCPCKYKLKSTNFCVTCENQAPVHFVGVGSC 112

RESULT 10

US-08-875-811-63
; Sequence 63, Application US/08875811
; Patent No. 6045793
; GENERAL INFORMATION:
; APPLICANT: Rybak, Susanna M.
; APPLICANT: Newton, Dianne L.
; APPLICANT: Boque, Lluis
; APPLICANT: Wlodawer, Alexander
; TITLE OF INVENTION: Recombinant Ribonuclease Proteins
; NUMBER OF SEQUENCES: 64
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Townsend and Townsend and Crew LLP
; STREET: Two Embarcadero Center, Eighth Floor
; CITY: San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94111-3834
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent In Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/875,811
; FILING DATE: 19-FEB-1998
; CLASSIFICATION: 435
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: WO PCT/US97/02588
; FILING DATE: 19-FEB-1997
; INFORMATION FOR SEQ ID NO: 63:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 129 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: protein
US-08-875-811-63

Query Match 95.4%; Score 556; DB 3; Length 129;
Best Local Similarity 96.2%; Pred. No. 4.8e-60;
Matches 100; Conservative 2; Mismatches 2; Indels 0; Gaps 0;

QY 2 QDWLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPPVKAICKGIIASKNNVLT 61
Db 26 QDWLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPPVKAICKGIIASKNNVLT 85
QY 62 SEFYSDCNVTSRCPCKYKLKSTNFCVTCENQAPVHFVGVGHC 105
Db 86 SEFYSDCNVTSRCPCKYKLKSTNFCVTCENQAPVHFVGVGSC 129

RESULT 11

US-08-875-811-59
; Sequence 59, Application US/08875811
; Patent No. 6045793
; GENERAL INFORMATION:
; APPLICANT: Rybak, Susanna M.
; APPLICANT: Newton, Dianne L.
; APPLICANT: Boque, Lluis
; APPLICANT: Wlodawer, Alexander
; TITLE OF INVENTION: Recombinant Ribonuclease Proteins
; NUMBER OF SEQUENCES: 64
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Townsend and Townsend and Crew LLP
; STREET: Two Embarcadero Center, Eighth Floor
; CITY: San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94111-3834
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent In Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/875,811
; FILING DATE: 19-FEB-1998
; CLASSIFICATION: 435
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: WO PCT/US97/02588
; FILING DATE: 19-FEB-1997
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 60/011,800
; FILING DATE: 21-FEB-1996
; ATTORNEY/AGENT INFORMATION:
; NAME: Paris, Susan K.
; REGISTRATION NUMBER: 41,739
; REFERENCE/DOCKET NUMBER: 015280-244100US
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (415) 576-0200
; TELEFAX: (415) 576-0300
; INFORMATION FOR SEQ ID NO: 59:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 251 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: protein
US-08-875-811-59

Query Match 95.4%; Score 556; DB 3; Length 251;
Best Local Similarity 95.2%; Pred. No. 1.1e-59;
Matches 100; Conservative 2; Mismatches 3; Indels 0; Gaps 0;

QY 1 MDWLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPPVKAICKGIIASKNNVLT 60
Db 147 MSDWLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPPVKAICKGIIASKNNVLT 206
QY 61 TSEFYSDCNVTSRCPCKYKLKSTNFCVTCENQAPVHFVGVGHC 105
Db 207 TSEFYSDCNVTSRCPCKYKLKSTNFCVTCENQAPVHFVGVGSC 251

RESULT 12

US-08-875-811-61
; Sequence 61, Application US/08875811
; Patent No. 6045793
; GENERAL INFORMATION:
; APPLICANT: Rybak, Susanna M.
; APPLICANT: Newton, Dianne L.
; APPLICANT: Boque, Lluis
; APPLICANT: Wlodawer, Alexander
; TITLE OF INVENTION: Recombinant Ribonuclease Proteins
; NUMBER OF SEQUENCES: 64
; CORRESPONDENCE ADDRESS:

ADDRESSEE: Townsend and Townsend and Crew LLP
STREET: Two Embarcadero Center, Eighth Floor
CITY: San Francisco
STATE: California
COUNTRY: USA
ZIP: 94111-3834
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/875,811
FILING DATE: 19-FEB-1998
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 60/011,800
FILING DATE: 21-FEB-1996
ATTORNEY/AGENT INFORMATION:
NAME: Paris, Susan K.
REGISTRATION NUMBER: 41,739
REFERENCE/DOCKET NUMBER: 015280-244100US
TELECOMMUNICATION INFORMATION:
TELEPHONE: (415) 576-0200
TELEFAX: (415) 576-0300
INFORMATION FOR SEQ ID NO: 61:
SEQUENCE CHARACTERISTICS:
LENGTH: 254 amino acids
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: protein
US-08-875-811-49

Query Match 95.4%; Score 556; DB 3; Length 254;
Best Local Similarity 95.2%; Pred. No. 1.2e-59;
Matches 100; Conservative 2; Mismatches 3; Indels 0; Gaps 0;
QY 1 MQDWLTFQKKHLNTRDVCNIMSTNLFHCKDKNTFIYSRPFVKAIKGIASKNVLT 60
Db 1 MSDWLTFFQKKHITNTRDVCNIMSTNLFHCKDKNTFIYSRPFVKAIKGIASKNVLT 60
QY 61 TSEFYSDCNVTSRCPCKYKLLKSTNFCVTCENQAPVHFVGVGHC 105
Db 61 TSEFYSDCNVTSRCPCKYKLLKSTNFCVTCENQAPVHFVGVGSC 105

RESULT 13
US-08-875-811-49
Sequence 49, Application US/08875811
Patent No. 6045793
GENERAL INFORMATION:
APPLICANT: Rybak, Susanna M.
APPLICANT: Newton, Dianne L.
APPLICANT: Boque, Lluis
APPLICANT: Wlodawer, Alexander
TITLE OF INVENTION: Recombinant Ribonuclease Proteins
NUMBER OF SEQUENCES: 64
CORRESPONDENCE ADDRESS:
ADDRESSEE: Townsend and Townsend and Crew LLP
STREET: Two Embarcadero Center, Eighth Floor
CITY: San Francisco
STATE: California
COUNTRY: USA
ZIP: 94111-3834
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/08/875,811
FILING DATE: 19-FEB-1998
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: WO PCT/US97/02588
FILING DATE: 19-FEB-1997
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 60/011,800
FILING DATE: 21-FEB-1996
ATTORNEY/AGENT INFORMATION:
NAME: Paris, Susan K.
REGISTRATION NUMBER: 41,739
REFERENCE/DOCKET NUMBER: 015280-244100US
TELECOMMUNICATION INFORMATION:
TELEPHONE: (415) 576-0200
TELEFAX: (415) 576-0300
INFORMATION FOR SEQ ID NO: 49:
SEQUENCE CHARACTERISTICS:
LENGTH: 355 amino acids
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: protein
US-08-875-811-49
Query Match 95.4%; Score 556; DB 3; Length 355;
Best Local Similarity 95.2%; Pred. No. 1.8e-59;
Matches 100; Conservative 2; Mismatches 3; Indels 0; Gaps 0;
QY 1 MQDWLTFQKKHLNTRDVCNIMSTNLFHCKDKNTFIYSRPFVKAIKGIASKNVLT 60
Db 251 MSDWLTFFQKKHITNTRDVCNIMSTNLFHCKDKNTFIYSRPFVKAIKGIASKNVLT 310
QY 61 TSEFYSDCNVTSRCPCKYKLLKSTNFCVTCENQAPVHFVGVGHC 105
Db 311 TSEFYSDCNVTSRCPCKYKLLKSTNFCVTCENQAPVHFVGVGSC 355
RESULT 14
US-08-875-811-57
Sequence 57, Application US/08875811
Patent No. 6045793
GENERAL INFORMATION:
APPLICANT: Rybak, Susanna M.
APPLICANT: Newton, Dianne L.
APPLICANT: Boque, Lluis
APPLICANT: Wlodawer, Alexander
TITLE OF INVENTION: Recombinant Ribonuclease Proteins
NUMBER OF SEQUENCES: 64
CORRESPONDENCE ADDRESS:
ADDRESSEE: Townsend and Townsend and Crew LLP
STREET: Two Embarcadero Center, Eighth Floor
CITY: San Francisco
STATE: California
COUNTRY: USA
ZIP: 94111-3834
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/875,811
FILING DATE: 19-FEB-1998
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: WO PCT/US97/02588
FILING DATE: 19-FEB-1997
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 60/011,800
FILING DATE: 21-FEB-1996
ATTORNEY/AGENT INFORMATION:
NAME: Paris, Susan K.
REGISTRATION NUMBER: 41,739

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; REFERENCE/DOCKET NUMBER: 015280-244100US
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (415) 576-0200
; TELEFAX: (415) 576-0300
; INFORMATION FOR SEQ ID NO: 57:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 355 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: protein
; US-08-875-811-57

Query Match          95.4%; Score 556; DB 3; Length 355;
Best Local Similarity 95.2%; Pred. No. 1.8e-59;
Matches 100; Conservative 2; Mismatches 3; Indels 0; Gaps 0;

QY 1 MQDLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPPVKAICKGIISKNVLT 60
Db 1 MSDWLTFFQKKHITNTRDVCNNIMSTNLFHCKDKNTFIYSRPPVKAICKGIISKNVLT 60
QY 61 TSEFYLSDCNVTSPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 105
Db 61 TSEFYLSDCNVTSPCKYKLLKSTNKFCVTCENQAPVHFVGVGSC 105

RESULT 15
US-08-875-811-64
; Sequence 64, Application US/08875811
; Patent No. 6045793
; GENERAL INFORMATION:
; APPLICANT: Rybak, Susanna M.
; APPLICANT: Newton, Dianne L.
; APPLICANT: Boque, Luis
; APPLICANT: Wlodawer, Alexander
; TITLE OF INVENTION: Recombinant Ribonuclease Proteins
; NUMBER OF SEQUENCES: 64
; CORRESPONDENCE ADDRESS:
; ADDRESSER: Townsend and Townsend and Crew LLP
; STREET: Two Embarcadero Center, Eighth Floor
; CITY: San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94111-3834
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent In Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/875,811
; FILING DATE: 19-FEB-1998
; CLASSIFICATION: 435
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: WO PCT/US97/02588
; FILING DATE: 19-FEB-1997
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 60/011,800
; FILING DATE: 21-FEB-1996
; ATTORNEY/AGENT INFORMATION:
; NAME: Farris, Susan K.
; REGISTRATION NUMBER: 41,739
; REFERENCE/DOCKET NUMBER: 015280-244100US
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (415) 576-0200
; TELEFAX: (415) 576-0300
; INFORMATION FOR SEQ ID NO: 64:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 355 amino acids
; TYPE: amino acid
; STRANDEDNESS:
; TOPOLOGY: linear
; MOLECULE TYPE: protein
; FEATURE:
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; NAME/KEY: Protein
; LOCATION: 1..355
; OTHER INFORMATION: /note= "E6FB [Met-(-1)]SerrOnc"
; US-08-875-811-64

Query Match          95.4%; Score 556; DB 3; Length 355;
Best Local Similarity 95.2%; Pred. No. 1.8e-59;
Matches 100; Conservative 2; Mismatches 3; Indels 0; Gaps 0;

QY 1 MQDLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPPVKAICKGIISKNVLT 60
Db 251 MSDWLTFFQKKHITNTRDVCNNIMSTNLFHCKDKNTFIYSRPPVKAICKGIISKNVLT 310
QY 61 TSEFYLSDCNVTSPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 105
Db 311 TSEFYLSDCNVTSPCKYKLLKSTNKFCVTCENQAPVHFVGVGSC 355

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Job time : 12.1796 secs
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OM protein - protein search, using sw model

Run on: May 7, 2004, 21:29:40 ; Search time 33.6904 Seconds
(without alignments)
865.070 Million cell updates/sec

Title: US-09-961-400-6

Perfect score: 583

Sequence: 1 MQDWLTQKXHLNTRDVC.....TFCVTENQAPVHFVGVGHC 105

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Gapop 10.0 , Gapext 0.5

Searched: 1140673 seqs, 277566755 residues

Total number of hits satisfying chosen parameters: 1140673

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

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Database : Published Applications AA.*

- 1: /cgn2_6/ptodata/2/pubpaa/US07_PUBCOMB.pep.*
- 2: /cgn2_6/ptodata/2/pubpaa/PCT_NEW_PUB.pep.*
- 3: /cgn2_6/ptodata/2/pubpaa/US06_NEW_PUB.pep.*
- 4: /cgn2_6/ptodata/2/pubpaa/US06_PUBCOMB.pep.*
- 5: /cgn2_6/ptodata/2/pubpaa/US07_NEW_PUB.pep.*
- 6: /cgn2_6/ptodata/2/pubpaa/PCTUS_PUBCOMB.pep.*
- 7: /cgn2_6/ptodata/2/pubpaa/US08_NEW_PUB.pep.*
- 8: /cgn2_6/ptodata/2/pubpaa/US08_PUBCOMB.pep.*
- 9: /cgn2_6/ptodata/2/pubpaa/US09A_PUBCOMB.pep.*
- 10: /cgn2_6/ptodata/2/pubpaa/US09B_PUBCOMB.pep.*
- 11: /cgn2_6/ptodata/2/pubpaa/US09C_PUBCOMB.pep.*
- 12: /cgn2_6/ptodata/2/pubpaa/US09C_NEW_PUB.pep.*
- 13: /cgn2_6/ptodata/2/pubpaa/US10A_PUBCOMB.pep.*
- 14: /cgn2_6/ptodata/2/pubpaa/US10B_PUBCOMB.pep.*
- 15: /cgn2_6/ptodata/2/pubpaa/US10C_PUBCOMB.pep.*
- 16: /cgn2_6/ptodata/2/pubpaa/US10C_NEW_PUB.pep.*
- 17: /cgn2_6/ptodata/2/pubpaa/US60_NEW_PUB.pep.*
- 18: /cgn2_6/ptodata/2/pubpaa/US60_PUBCOMB.pep.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB	ID	Description
1	583	100.0	105	10	US-09-948-391A-6	Sequence 6, Appli
2	583	100.0	105	10	US-09-961-400-6	Sequence 6, Appli
3	580	99.5	111	10	US-09-961-400-9	Sequence 9, Appli
4	578	99.1	104	10	US-09-961-400-2	Sequence 2, Appli
5	578	99.1	105	10	US-09-948-391A-13	Sequence 13, Appl
6	578	99.1	105	10	US-09-961-400-13	Sequence 13, Appl
7	578	99.1	127	10	US-09-948-391A-28	Sequence 28, Appl
8	578	99.1	127	10	US-09-961-400-28	Sequence 28, Appl
9	573	98.3	104	10	US-09-948-391A-11	Sequence 11, Appl
10	573	98.3	104	10	US-09-961-400-11	Sequence 11, Appl
11	570	97.8	105	10	US-09-961-400-8	Sequence 8, Appli
12	569	97.6	104	10	US-09-948-391A-2	Sequence 2, Appli
13	569	97.6	104	10	US-09-948-391A-4	Sequence 4, Appli
14	569	97.6	104	10	US-09-961-400-4	Sequence 4, Appli
15	565	96.9	105	10	US-09-948-391A-8	Sequence 8, Appli

16	565	96.9	111	10	US-09-948-391A-9	Sequence 9, Appli
17	561	96.2	105	14	US-10-153-882-2	Sequence 2, Appli
18	551	94.5	104	9	US-09-986-119-1	Sequence 1, Appli
19	551	94.5	104	10	US-09-918-887-1	Sequence 1, Appli
20	548	94.0	104	12	US-10-461-713-53	Sequence 53, Appli
21	445	76.3	83	9	US-09-986-119-3	Sequence 3, Appli
22	445	76.3	83	10	US-09-918-887-3	Sequence 3, Appli
23	286.5	49.1	111	10	US-09-961-400-17	Sequence 17, Appli
24	282.5	48.5	111	10	US-09-948-391A-21	Sequence 21, Appli
25	282.5	48.5	111	10	US-09-961-400-21	Sequence 21, Appli
26	282.5	48.5	117	10	US-09-948-391A-22	Sequence 22, Appli
27	282.5	48.5	117	10	US-09-961-400-22	Sequence 22, Appli
28	281.5	48.3	110	10	US-09-948-391A-15	Sequence 15, Appli
29	281.5	48.3	110	10	US-09-961-400-15	Sequence 15, Appli
30	281.5	48.3	111	10	US-09-948-391A-26	Sequence 26, Appli
31	281.5	48.3	111	10	US-09-961-400-26	Sequence 26, Appli
32	280.5	48.1	111	10	US-09-948-391A-17	Sequence 17, Appli
33	277.5	47.6	110	10	US-09-961-400-19	Sequence 19, Appli
34	276.5	47.4	110	10	US-09-948-391A-24	Sequence 24, Appli
35	276.5	47.4	110	10	US-09-961-400-24	Sequence 24, Appli
36	271.5	46.6	110	10	US-09-948-391A-19	Sequence 19, Appli
37	157.5	27.0	169	13	US-10-016-447-2	Sequence 2, Appli
38	149	25.6	119	12	US-10-016-248-89	Sequence 89, Appli
39	149	25.6	119	15	US-10-074-978A-139	Sequence 139, App
40	128.5	22.0	124	13	US-10-016-447-5	Sequence 5, Appli
41	125	21.4	124	12	US-10-037-417-103	Sequence 103, App
42	113	19.4	147	9	US-09-286-240-6	Sequence 6, Appli
43	113	19.4	147	9	US-09-863-777-2	Sequence 2, Appli
44	113	19.4	147	9	US-09-731-872-254	Sequence 254, App
45	113	19.4	147	10	US-09-876-997-254	Sequence 254, App

ALIGNMENTS

RESULT 1

US-09-948-391A-6
; Sequence 6, Application US/09948391A
; Publication No. US20030027311A1
; GENERAL INFORMATION:
; APPLICANT: Rybak, Susanna M.
; APPLICANT: Newton, Dianne L.
; APPLICANT: The United States of America
; APPLICANT: as represented by The Secretary of the
; APPLICANT: Department of Health and Human Services
; TITLE OF INVENTION: Recombinant Anti-Tumor RNase
; FILE REFERENCE: 015280-343110US
; CURRENT APPLICATION NUMBER: US/09/948.391A
; CURRENT FILING DATE: 2002-05-10
; PRIOR APPLICATION NUMBER: US 60/079,751
; PRIOR FILING DATE: 1998-03-27
; PRIOR APPLICATION NUMBER: WO PCT/US99/06641
; PRIOR FILING DATE: 1999-03-26
; PRIOR APPLICATION NUMBER: US 09/622,613
; PRIOR FILING DATE: 2000-08-17
; NUMBER OF SEQ ID NOS: 43
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 6
; LENGTH: 105
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence:Rana pipiens
; OTHER INFORMATION: ribonuclease with Met at position 1 (recombinant
; OTHER INFORMATION: Met(-1) Rapur1)
US-09-948-391A-6

Query Match 100.0%; Score 583; DB 10; Length 105;
Best Local Similarity 100.0%; Pred. No. 3.7e-59;
Matches 105; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 MQDWLTQKXHLNTRDVCNNIMSTNLFHCKNTFYSRPEPVKAICKGIASKNVLT 60
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QY 61 TSEFYLSDCNVTSRPCKYKLGKSTNTFCVTCEQAPVHFVGVGHC 105
Db 61 TSEFYLSDCNVTSRPCKYKLGKSTNTFCVTCEQAPVHFVGVGHC 105

RESULT 2
US-09-961-400-6
; Sequence 6, Application US/09961400
; Publication No. US20030124131A1
; GENERAL INFORMATION:
; APPLICANT: RYBAK, SUSANNA M.
; APPLICANT: GOLDENBERG, DAVID M.
; TITLE OF INVENTION: IMMUNOCONJUGATES OF TOXINS DIRECTED AGAINST MALIGNANT
; TITLE OF INVENTION: CELLS
; FILE REFERENCE: 018733/1059
; CURRENT APPLICATION NUMBER: US/09/961,400
; CURRENT FILING DATE: 2001-09-25
; PRIOR APPLICATION NUMBER: 09/622,613
; PRIOR FILING DATE: 2000-08-17
; PRIOR APPLICATION NUMBER: PCT/US99/06641
; PRIOR FILING DATE: 1999-03-26
; PRIOR APPLICATION NUMBER: 60/079,751
; PRIOR FILING DATE: 1998-03-26
; NUMBER OF SEQ ID NOS: 43
; SOFTWARE: Patent In Ver. 2.1
; SEQ ID NO 6
; LENGTH: 105
; TYPE: PRT
; ORGANISM: Rana pipiens
US-09-961-400-6

Query Match 100.0%; Score 583; DB 10; Length 105;
Best Local Similarity 100.0%; Pred. No. 3.7e-59;
Matches 105; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MDWLTFQKKHLTNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 60
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QY 61 TSEFYLSDCNVTSRPCKYKLGKSTNTFCVTCEQAPVHFVGVGHC 105
Db 61 TSEFYLSDCNVTSRPCKYKLGKSTNTFCVTCEQAPVHFVGVGHC 105

RESULT 3
US-09-961-400-9
; Sequence 9, Application US/09961400
; Publication No. US20030124131A1
; GENERAL INFORMATION:
; APPLICANT: RYBAK, SUSANNA M.
; APPLICANT: GOLDENBERG, DAVID M.
; TITLE OF INVENTION: IMMUNOCONJUGATES OF TOXINS DIRECTED AGAINST MALIGNANT
; TITLE OF INVENTION: CELLS
; FILE REFERENCE: 018733/1059
; CURRENT APPLICATION NUMBER: US/09/961,400
; CURRENT FILING DATE: 2001-09-25
; PRIOR APPLICATION NUMBER: 09/622,613
; PRIOR FILING DATE: 2000-08-17
; PRIOR APPLICATION NUMBER: PCT/US99/06641
; PRIOR FILING DATE: 1999-03-26
; PRIOR APPLICATION NUMBER: 60/079,751
; PRIOR FILING DATE: 1998-03-26
; NUMBER OF SEQ ID NOS: 43
; SOFTWARE: Patent In Ver. 2.1
; SEQ ID NO 9
; LENGTH: 111
; TYPE: PRT
; ORGANISM: Rana pipiens
US-09-961-400-9
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Query Match 99.5%; Score 580; DB 10; Length 111;
Best Local Similarity 99.0%; Pred. No. 8.7e-59;
Matches 104; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

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QY 61 TSEFYLSDCNVTSRPCKYKLGKSTNTFCVTCEQAPVHFVGVGHC 105
Db 67 TSEFYLSDCNVTSRPCKYKLGKSTNTFCVTCEQAPVHFVGVGHC 111

RESULT 4
US-09-961-400-2
; Sequence 2, Application US/09961400
; Publication No. US20030124131A1
; GENERAL INFORMATION:
; APPLICANT: RYBAK, SUSANNA M.
; APPLICANT: GOLDENBERG, DAVID M.
; APPLICANT: NEWTON, DIANNE L.
; TITLE OF INVENTION: IMMUNOCONJUGATES OF TOXINS DIRECTED AGAINST MALIGNANT
; TITLE OF INVENTION: CELLS
; FILE REFERENCE: 018733/1059
; CURRENT APPLICATION NUMBER: US/09/961,400
; CURRENT FILING DATE: 2001-09-25
; PRIOR APPLICATION NUMBER: 09/622,613
; PRIOR FILING DATE: 2000-08-17
; PRIOR APPLICATION NUMBER: PCT/US99/06641
; PRIOR FILING DATE: 1999-03-26
; PRIOR APPLICATION NUMBER: 60/079,751
; PRIOR FILING DATE: 1998-03-26
; NUMBER OF SEQ ID NOS: 43
; SOFTWARE: Patent In Ver. 2.1
; SEQ ID NO 2
; LENGTH: 104
; TYPE: PRT
; ORGANISM: Rana pipiens
US-09-961-400-2

Query Match 99.1%; Score 578; DB 10; Length 104;
Best Local Similarity 100.0%; Pred. No. 1.4e-58;
Matches 104; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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QY 62 SEFYLSDCNVTSRPCKYKLGKSTNTFCVTCEQAPVHFVGVGHC 105
Db 61 SEFYLSDCNVTSRPCKYKLGKSTNTFCVTCEQAPVHFVGVGHC 104

RESULT 5
US-09-948-391A-13
; Sequence 13, Application US/09948391A
; Publication No. US20030027311A1
; GENERAL INFORMATION:
; APPLICANT: Rybak, Susanna M.
; APPLICANT: Newton, Dianne L.
; APPLICANT: The United States of America
; APPLICANT: as represented by The Secretary of the
; APPLICANT: Department of Health and Human Services
; TITLE OF INVENTION: Recombinant Anti-Tumor RNase
; FILE REFERENCE: 015280-343110US
; CURRENT APPLICATION NUMBER: US/09/948,391A
; CURRENT FILING DATE: 2002-05-10
; PRIOR APPLICATION NUMBER: US 60/079,751
; PRIOR FILING DATE: 1998-03-27
; PRIOR APPLICATION NUMBER: WO PCT/US99/06641
; PRIOR FILING DATE: 1999-03-26
; PRIOR APPLICATION NUMBER: US 09/622,613
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; PRIOR FILING DATE: 2000-08-17
; NUMBER OF SEQ ID NOS: 43
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 13
; LENGTH: 105
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence: Rana pipiens
; OTHER INFORMATION: ribonuclease with Met at position 1 and Gln2ser
; OTHER INFORMATION: substitution (recombinant Met(-1) RapiR1 Q1S)
US-09-948-391A-13

Query Match
Best Local Similarity 99.1%; Score 578; DB 10; Length 105;
Matches 104; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

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QY 61 TSEFYLSDCNVTSRPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 105
Db 61 TSEFYLSDCNVTSRPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 105

RESULT 6
US-09-961-400-13
; Sequence 13, Application US/09961400
; Publication No. US20030124131A1
; GENERAL INFORMATION:
; APPLICANT: RYBAK, SUSANNA M.
; APPLICANT: GOLDENBERG, DAVID M.
; APPLICANT: NEWTON, DIANNE L.
; TITLE OF INVENTION: IMMUNOCONJUGATES OF TOXINS DIRECTED AGAINST MALIGNANT
; FILE REFERENCE: 018733/1059
; CURRENT APPLICATION NUMBER: US/09/961,400
; PRIOR FILING DATE: 2001-09-25
; PRIOR APPLICATION NUMBER: 09/622,613
; PRIOR FILING DATE: 2000-08-17
; PRIOR APPLICATION NUMBER: PCT/US99/06641
; PRIOR FILING DATE: 1999-03-26
; PRIOR APPLICATION NUMBER: 60/079,751
; PRIOR FILING DATE: 1998-03-26
; NUMBER OF SEQ ID NOS: 43
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 13
; LENGTH: 105
; TYPE: PRT
; ORGANISM: Rana pipiens
US-09-961-400-13

Query Match
Best Local Similarity 99.1%; Score 578; DB 10; Length 105;
Matches 104; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 1 MODWLTFOKKHLTNRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 60
Db 1 MSDWLTFOKKHLTNRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 60

QY 61 TSEFYLSDCNVTSRPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 105
Db 61 TSEFYLSDCNVTSRPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 105

RESULT 7
US-09-948-391A-28
; Sequence 28, Application US/09948391A
; Publication No. US20030027311A1
; GENERAL INFORMATION:
; APPLICANT: Rybak, Susanna M.
; APPLICANT: Newton, Dianne L.

; APPLICANT: The United States of America
; APPLICANT: as represented by The Secretary of the
; APPLICANT: Department of Health and Human Services
; TITLE OF INVENTION: Recombinant Anti-Tumor RNase
; FILE REFERENCE: 015280-343110US
; CURRENT APPLICATION NUMBER: US/09/948,391A
; CURRENT FILING DATE: 2002-05-10
; PRIOR APPLICATION NUMBER: US 60/079,751
; PRIOR FILING DATE: 1998-03-27
; PRIOR APPLICATION NUMBER: WO PCT/US99/06641
; PRIOR FILING DATE: 1999-03-26
; PRIOR APPLICATION NUMBER: US 09/622,613
; PRIOR FILING DATE: 2000-08-17
; NUMBER OF SEQ ID NOS: 43
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 28
; LENGTH: 127
; TYPE: PRT
; ORGANISM: Rana pipiens
; FEATURE:
; OTHER INFORMATION: Rana pipiens ribonuclease (RapiR1) Clone 5a1b cDNA
; OTHER INFORMATION: insert
US-09-948-391A-28

Query Match
Best Local Similarity 99.1%; Score 578; DB 10; Length 127;
Matches 104; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 2 QDWLTFOKKHLTNRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 61
Db 24 QDWLTFOKKHLTNRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 83

QY 62 SEFYLSDCNVTSRPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 105
Db 84 SEFYLSDCNVTSRPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 127

RESULT 8
US-09-961-400-28
; Sequence 28, Application US/09961400
; Publication No. US20030124131A1
; GENERAL INFORMATION:
; APPLICANT: RYBAK, SUSANNA M.
; APPLICANT: GOLDENBERG, DAVID M.
; APPLICANT: NEWTON, DIANNE L.
; TITLE OF INVENTION: IMMUNOCONJUGATES OF TOXINS DIRECTED AGAINST MALIGNANT
; FILE REFERENCE: 018733/1059
; CURRENT APPLICATION NUMBER: US/09/961,400
; CURRENT FILING DATE: 2001-09-25
; PRIOR APPLICATION NUMBER: 09/622,613
; PRIOR FILING DATE: 2000-08-17
; PRIOR APPLICATION NUMBER: PCT/US99/06641
; PRIOR FILING DATE: 1999-03-26
; PRIOR APPLICATION NUMBER: 60/079,751
; PRIOR FILING DATE: 1998-03-26
; NUMBER OF SEQ ID NOS: 43
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 28
; LENGTH: 127
; TYPE: PRT
; ORGANISM: Rana pipiens
US-09-961-400-28

Query Match
Best Local Similarity 99.1%; Score 578; DB 10; Length 127;
Matches 104; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 2 QDWLTFOKKHLTNRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 61
Db 24 QDWLTFOKKHLTNRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 83

QY 62 SEFYLSDCNVTSRPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 105
Db 84 SEFYLSDCNVTSRPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 105
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Db 84 SEFYSDCNVTSRPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 127

RESULT 9

US-09-948-391A-11
; Sequence 11, Application US/09948391A
; Publication No. US20030027311A1
; GENERAL INFORMATION:
; APPLICANT: Rybak, Susanna M.
; APPLICANT: Newton, Dianne L.
; APPLICANT: The United States of America
; APPLICANT: as represented by The Secretary of the
; APPLICANT: Department of Health and Human Services
; TITLE OF INVENTION: Recombinant Anti-Tumor RNase
; FILE REFERENCE: 015280-343110US
; CURRENT APPLICATION NUMBER: US/09/948,391A
; CURRENT FILING DATE: 2002-05-10
; PRIOR APPLICATION NUMBER: US 60/079,751
; PRIOR FILING DATE: 1998-03-27
; PRIOR APPLICATION NUMBER: WO PCT/US99/06641
; PRIOR FILING DATE: 1999-03-26
; PRIOR APPLICATION NUMBER: US 09/622,613
; PRIOR FILING DATE: 2000-08-17
; NUMBER OF SEQ ID NOS: 43
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 11
; LENGTH: 104
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence:Rana pipiens
; OTHER INFORMATION: ribonuclease with Gln1ser substitution
; OTHER INFORMATION: (recombinant RapLr1 Q1S)
US-09-948-391A-11

Query Match 98.3%; Score 573; DB 10; Length 104;
Best Local Similarity 100.0%; Pred. No. 5.1e-58;
Matches 103; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 3 DMLTFQKKHLTNRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLTTS 62
Db 2 DMLTFQKKHLTNRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLTTS 61

QY 63 EFYLSDCNVTSPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 105
Db 62 EFYLSDCNVTSPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 104

RESULT 10

US-09-961-400-11
; Sequence 11, Application US/09961400
; Publication No. US20030124131A1
; GENERAL INFORMATION:
; APPLICANT: RYBAK, SUSANNA M.
; APPLICANT: GOLDENBERG, DAVID M.
; APPLICANT: NEWTON, DIANNE L.
; TITLE OF INVENTION: IMMUNOCONJUGATES OF TOXINS DIRECTED AGAINST MALIGNANT
; FILE REFERENCE: 018733/1059
; CURRENT APPLICATION NUMBER: US/09/961,400
; CURRENT FILING DATE: 2001-09-25
; PRIOR APPLICATION NUMBER: 09/622,613
; PRIOR FILING DATE: 2000-08-17
; PRIOR APPLICATION NUMBER: PCT/US99/06641
; PRIOR FILING DATE: 1999-03-26
; PRIOR APPLICATION NUMBER: 60/079,751
; PRIOR FILING DATE: 1998-03-26
; NUMBER OF SEQ ID NOS: 43
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 11
; LENGTH: 104
; TYPE: PRT

; ORGANISM: Rana pipiens
US-09-961-400-11

Query Match 98.3%; Score 573; DB 10; Length 104;
Best Local Similarity 100.0%; Pred. No. 5.1e-58;
Matches 103; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 3 DMLTFQKKHLTNRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLTTS 62
Db 2 DMLTFQKKHLTNRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLTTS 61

QY 63 EFYLSDCNVTSPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 105
Db 62 EFYLSDCNVTSPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 104

RESULT 11

US-09-961-400-8
; Sequence 8, Application US/09961400
; Publication No. US20030124131A1
; GENERAL INFORMATION:
; APPLICANT: RYBAK, SUSANNA M.
; APPLICANT: GOLDENBERG, DAVID M.
; APPLICANT: NEWTON, DIANNE L.
; TITLE OF INVENTION: IMMUNOCONJUGATES OF TOXINS DIRECTED AGAINST MALIGNANT
; TITLE OF INVENTION: CELLS
; FILE REFERENCE: 018733/1059
; CURRENT APPLICATION NUMBER: US/09/961,400
; CURRENT FILING DATE: 2001-09-25
; PRIOR APPLICATION NUMBER: 09/622,613
; PRIOR FILING DATE: 2000-08-17
; PRIOR APPLICATION NUMBER: PCT/US99/06641
; PRIOR FILING DATE: 1999-03-26
; PRIOR APPLICATION NUMBER: 60/079,751
; PRIOR FILING DATE: 1998-03-26
; NUMBER OF SEQ ID NOS: 43
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 8
; LENGTH: 105
; TYPE: PRT
; ORGANISM: Rana pipiens
US-09-961-400-8

Query Match 97.8%; Score 570; DB 10; Length 105;
Best Local Similarity 97.1%; Pred. No. 1.1e-57;
Matches 102; Conservative 1; Mismatches 2; Indels 0; Gaps 0;

QY 1 MQDWLTFQKKHLTNRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 60
Db 1 MQDWLTFQKKHLTNRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 60

QY 61 TSEFYLSDCNVTSPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 105
Db 61 TSEFYLSDCNVTSPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 105

RESULT 12

US-09-948-391A-2
; Sequence 2, Application US/09948391A
; Publication No. US20030027311A1
; GENERAL INFORMATION:
; APPLICANT: Rybak, Susanna M.
; APPLICANT: Newton, Dianne L.
; APPLICANT: The United States of America
; APPLICANT: as represented by The Secretary of the
; APPLICANT: Department of Health and Human Services
; TITLE OF INVENTION: Recombinant Anti-Tumor RNase
; FILE REFERENCE: 015280-343110US
; CURRENT APPLICATION NUMBER: US/09/948,391A
; CURRENT FILING DATE: 2002-05-10
; PRIOR APPLICATION NUMBER: US 60/079,751
; PRIOR FILING DATE: 1998-03-27
; PRIOR APPLICATION NUMBER: WO PCT/US99/06641

```
; PRIOR FILING DATE: 1999-03-26
; PRIOR APPLICATION NUMBER: US 09/622,613
; PRIOR FILING DATE: 2000-08-17
; NUMBER OF SEQ ID NOS: 43
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 2
; LENGTH: 104
; TYPE: PRT
; ORGANISM: Rana pipiens
; FEATURE:
; OTHER INFORMATION: ribonuclease (RaPLR1)
US-09-948-391A-2

Query Match          97.6%; Score 569; DB 10; Length 104;
Best Local Similarity 99.0%; Pred. No. 1.5e-57;
Matches 103; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 2 QDWLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 61
Db 1 QDWLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 60

QY 62 SEFYLSDCNVTSPCKYKLLKSKTNTFCVTCENQAPVHFVGVGHC 105
Db 61 SEFYLSDCNVTSPCKYKLLKSKTNTFCVTCENQAPVHFVGVGHC 104

RESULT 13
US-09-948-391A-4
; Sequence 4, Application US/09948391A
; Publication No. US20030027311A1
; GENERAL INFORMATION:
; APPLICANT: Rybak, Susanna M.
; APPLICANT: Newton, Dianne L.
; APPLICANT: The United States of America
; APPLICANT: as represented by The Secretary of the
; APPLICANT: Department of Health and Human Services
; TITLE OF INVENTION: Recombinant Anti-Tumor RNase
; FILE REFERENCE: 015280-343110US
; CURRENT APPLICATION NUMBER: US/09/948,391A
; CURRENT FILING DATE: 2002-05-10
; PRIOR APPLICATION NUMBER: US 60/079,751
; PRIOR FILING DATE: 1998-03-27
; PRIOR APPLICATION NUMBER: WO PCT/US99/06641
; PRIOR FILING DATE: 1999-03-26
; PRIOR APPLICATION NUMBER: US 09/622,613
; PRIOR FILING DATE: 2000-08-17
; NUMBER OF SEQ ID NOS: 43
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 4
; LENGTH: 104
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence:Rana pipiens
; OTHER INFORMATION: ribonuclease with Met23leu substitution
; OTHER INFORMATION: (recombinant RaPLR1 Met23leu)
US-09-948-391A-4

Query Match          97.6%; Score 569; DB 10; Length 104;
Best Local Similarity 98.1%; Pred. No. 1.5e-57;
Matches 102; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 2 QDWLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 61
Db 1 QDWLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 60

QY 62 SEFYLSDCNVTSPCKYKLLKSKTNTFCVTCENQAPVHFVGVGHC 105
Db 61 SEFYLSDCNVTSPCKYKLLKSKTNTFCVTCENQAPVHFVGVGHC 104

RESULT 14
US-09-961-400-4
; Sequence 4, Application US/09961400
; Publication No. US20030124131A1
; GENERAL INFORMATION:
; APPLICANT: RYBAK, SUSANNA M.
; APPLICANT: GOLDENBERG, DAVID M.
; APPLICANT: NEWTON, DIANNE L.
; TITLE OF INVENTION: IMMUNOCONJUGATES OF TOXINS DIRECTED AGAINST MALIGNANT
; TITLE OF INVENTION: CELLS
; FILE REFERENCE: 018733/1059
; CURRENT APPLICATION NUMBER: US/09/961,400
; CURRENT FILING DATE: 2001-09-25
; PRIOR APPLICATION NUMBER: 09/622,613
; PRIOR FILING DATE: 2000-08-17
; PRIOR APPLICATION NUMBER: PCT/US99/06641
; PRIOR FILING DATE: 1999-03-26
; PRIOR APPLICATION NUMBER: 60/079,751
; PRIOR FILING DATE: 1998-03-26
; NUMBER OF SEQ ID NOS: 43
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 4
; LENGTH: 104
; TYPE: PRT
; ORGANISM: Rana pipiens
; ORGANISM: Rana pipiens
US-09-961-400-4

Query Match          97.6%; Score 569; DB 10; Length 104;
Best Local Similarity 98.1%; Pred. No. 1.5e-57;
Matches 102; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 2 QDWLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 61
Db 1 QDWLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 60

QY 62 SEFYLSDCNVTSPCKYKLLKSKTNTFCVTCENQAPVHFVGVGHC 105
Db 61 SEFYLSDCNVTSPCKYKLLKSKTNTFCVTCENQAPVHFVGVGHC 104

RESULT 15
US-09-948-391A-8
; Sequence 8, Application US/09948391A
; Publication No. US20030027311A1
; GENERAL INFORMATION:
; APPLICANT: Rybak, Susanna M.
; APPLICANT: Newton, Dianne L.
; APPLICANT: The United States of America
; APPLICANT: as represented by The Secretary of the
; APPLICANT: Department of Health and Human Services
; TITLE OF INVENTION: Recombinant Anti-Tumor RNase
; FILE REFERENCE: 015280-343110US
; CURRENT APPLICATION NUMBER: US/09/948,391A
; CURRENT FILING DATE: 2002-05-10
; PRIOR APPLICATION NUMBER: US 60/079,751
; PRIOR FILING DATE: 1998-03-27
; PRIOR APPLICATION NUMBER: WO PCT/US99/06641
; PRIOR FILING DATE: 1999-03-26
; PRIOR APPLICATION NUMBER: US 09/622,613
; PRIOR FILING DATE: 2000-08-17
; NUMBER OF SEQ ID NOS: 43
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 8
; LENGTH: 105
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence:Rana pipiens
; OTHER INFORMATION: ribonuclease with Met at position 1 and Met24leu
; OTHER INFORMATION: substitution (recombinant Met(-1) RaPLR1 Met23leu)
US-09-948-391A-8

Query Match          96.9%; Score 565; DB 10; Length 105;
Best Local Similarity 97.1%; Pred. No. 4.3e-57;
Matches 102; Conservative 1; Mismatches 2; Indels 0; Gaps 0;
```

QY	1	MODWLTFOKKHLTNTTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT	60
Db	1	MODWLTFOKKHLTNTTRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT	60
QY	61	TSEFYLSDCNVTSRPCKYKYLKSKSTNTFCVTCENQAPVHFVGVGHC	105
Db	61	TSEFYLSDCNVTSRPCKYKYLKSKSTNTFCVTCENQAPVHFVGVGHC	105

Search completed: May 7, 2004, 21:51:56
Job time : 33.6904 secs

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OM protein - protein search, using sw model

Run on: May 7, 2004, 21:38:36 ; Search time 9.5276 Seconds
(without alignments)
1060.090 Million cell updates/sec

Title: US-09-961-400-6

Perfect score: 583

Sequence: 1 MQDWLTFQKKHLNTRDVC.....TFVCVTCENQAPVHFVGVC 105

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 283366 seqs, 96191526 residues

Total number of hits satisfying chosen parameters: 283366

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database :

PIR 78:*

1: PIR1:*

2: PIR2:*

3: PIR3:*

4: PIR4:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	553	94.9	104	2 A39035	ribonuclease-relat
2	289	49.6	111	2 A27121	ribonuclease-relat
3	285.5	49.0	111	1 JX0120	ribonuclease-relat
4	269.5	46.2	111	2 JX0085	pancreatic ribonuc
5	149	25.6	119	2 S41111	pancreatic ribonuc
6	131	22.5	124	1 NRUI	pancreatic ribonuc
7	128	22.0	125	1 A32474	pancreatic ribonuc
8	126	21.6	128	1 NRCU	pancreatic ribonuc
9	125	21.4	124	1 NRWHK	pancreatic ribonuc
10	120	20.6	128	1 NRKS	pancreatic ribonuc
11	119.5	20.5	145	1 A35932	angiotensin precurs
12	119	20.4	128	1 NRGFB	pancreatic ribonuc
13	117	20.1	124	1 NRCB	pancreatic ribonuc
14	116	19.9	125	1 B43825	pancreatic ribonuc
15	116	19.9	128	1 NRYV	pancreatic ribonuc
16	114	19.6	124	1 NRHP	angiotensin - rabbi
17	113	19.4	147	1 NRHUG	pancreatic ribonuc
18	112	19.2	124	1 NRBOB	angiotensin precurs
19	112	19.2	124	1 NRCG	pancreatic ribonuc
20	112	19.2	150	1 NRBO	pancreatic ribonuc
21	111.5	19.1	147	2 I52489	pancreatic ribonuc
22	111	19.0	124	2 S08549	ribonuclease 4 (EC
23	111	19.0	128	1 NRHO	ribonuclease - dom
24	111	19.0	128	1 NRHO	pancreatic ribonuc
25	111	19.0	167	2 S20066	pancreatic ribonuc
26	110.5	19.0	123	1 A43825	pancreatic-type ri
27	110.5	19.0	155	2 J06159	angiotensin - pig
28	109	18.7	124	1 NRSH	eosinophil-associa
29	109	18.7	124	1 NRPH	pancreatic ribonuc

30 109 18.7 124 1 NRGPA pancreatic ribonuc

31 109 18.7 124 2 S07141 pancreatic ribonuc

32 108 18.5 124 1 NRWB pancreatic ribonuc

33 108 18.5 124 1 NRCN pancreatic ribonuc

34 107 18.4 124 1 NRGF eosinophil-associa

35 106 18.2 156 2 J06160 pancreatic ribonuc

36 105 18.0 124 1 NRDEO pancreatic ribonuc

37 105 18.0 124 1 NRCM pancreatic ribonuc

38 105 18.0 124 1 NRCM pancreatic ribonuc

39 105 18.0 124 1 NRCM pancreatic ribonuc

40 105 18.0 124 1 NRCM pancreatic ribonuc

41 104 17.8 124 1 NRHY pancreatic ribonuc

42 103 17.7 124 1 NRDER pancreatic ribonuc

43 103 17.7 124 1 NRDER pancreatic ribonuc

44 103 17.7 124 1 NREKN pancreatic ribonuc

45 102 17.5 124 1 NRDEF pancreatic ribonuc

ALIGNMENTS

RESULT 1

A39035

ribonuclease-related anti-tumor protein - northern leopard frog (fragment)

C:Species: Rana pipiens (northern leopard frog)

C:Date: 31-Jul-1991 #sequence_revision 31-Jul-1991 #text_change 30-Jun-1993

C:Accession: A39035

R:Ardelt, W.; Mikulecki, S.M.; Shogen, K.

J. Biol. Chem. 266, 245-251, 1991

A:Title: Amino acid sequence of an anti-tumor protein from Rana pipiens oocytes and earl

A:Reference number: A39035; MUID:91093131; PMID:1985896

A:Accession: A39035

A:Status: preliminary

A:Molecule type: protein

A:Residues: 1-104 <ARD>

C:Superfamily: pancreatic ribonuclease

Query Match 94.9%; Score 553; DB 2; Length 104;

Best Local Similarity 95.2%; Pred. No. 1.2e-48;

Matches 99; Conservative 3; Mismatches 2; Indels 0; Gaps 0;

QY 2 QDWLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLTT 61

DB 1 EDWLTFFQKKHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLTT 60

QY 62 SEFYLSDCNVTSRPCKYKLLKSTNTFCVTCENQAPVHFVGVC 105

DB 61 SEFYLSDCNVTSRPCKYKLLKSTNTFCVTCENQAPVHFVGVC 104

RESULT 2

A27121

ribonuclease-related sialic acid-binding lectin - bullfrog

C:Species: Rana catesbeiana (bullfrog)

C:Date: 19-Nov-1988 #sequence_revision 19-Nov-1988 #text_change 30-Jun-1993

C:Accession: A27121

R:Titani, K.; Takio, K.; Kuwada, M.; Nitta, K.; Sakakibara, F.; Takayanagi

Biochemistry 26, 2189-2194, 1987

A:Title: Amino acid sequence of sialic acid-binding lectin from frog (Rana catesbeiana)

A:Reference number: A27121; MUID:87299649; PMID:3304421

A:Accession: A27121

A:Molecule type: protein

A:Residues: 1-111 <TIT>

C:Superfamily: pancreatic ribonuclease

C:Keywords: lectin

Query Match

Best Local Similarity 49.6%; Score 289; DB 2; Length 111;

Matches 54; Conservative 17; Mismatches 32; Indels 8; Gaps 3;

QY 2 QDWLTFQKKHLNTRDVCNNIMSTNLF----HCKDKNTFIYSRPEPVKAICKGIASKN 57

DB 1 ENWATFOQKHINTPIINCNTIMDNNTIYVGQCKRVNTFISSATTVAICTGVI--NNN 59

```

C/Species: Iguana iguana (common iguana)
C/Date: 19-Mar-1997 #sequence_revision 19-Mar-1997 #text_change 21-Aug-1998
C/Accession: S4111
R/Zhao, W.; Beintema, J. J.; Hofsteenge, J.
Eur. J. Biochem. 219, 641-646, 1994
A/Title: The amino acid sequence of iguana (Iguana iguana) pancreatic ribonuclease.
A/Reference number: S4111; MUID:94139745; PMID:8307028
A/Accession: S4111
A/Status: preliminary
A/Molecule type: protein
A/Residues: 1-119 <ZHA>
C/Superfamily: pancreatic ribonuclease

Query Match 25.6%; Score 149; DB 2; Length 119;
Best Local Similarity 30.7%; Pred. No. 5.7e-08;
Matches 35; Conservative 19; Mismatches 44; Indels 16; Gaps 5;

QY 2 QDWLTFQKKHL-----TNRDVCNNIM---STNLFHCKDKNTFIYSRPEPVKAIC--K 50
Db 1 QDMVSFQNKHIDYPTTSASNPAYCDLMQRRLNPTCKRTFTVHASPSEIQQVCGSG 60

QY 51 GIATSKNVLTISE-FYLSDC----NVTSRPCYKYLKKSNTFCVTCENQAPVHF 99
Db 61 GTHYEDNLVDSNESFLTDCKNVGGTAPSSCKYNGTPTGKIRIACENNPVHF 114

RESULT 6
NRUI
Pancreatic ribonuclease (EC 3.1.27.5) - cuis
N/Alternate names: RNase 1; RNase A
C/Species: Galea musteloides (cuis)
C/Date: 03-Aug-1984 #sequence_revision 03-Aug-1984 #text_change 04-Oct-1996
C/Accession: A00827
R/Beintema, J. J.; Neuteboom, B.
J. Mol. Evol. 19, 145-152, 1983
A/Title: Origin of the duplicated ribonuclease gene in guinea-pig: comparison of the
A/Reference number: A92957; MUID:87036770; PMID:8571219
A/Accession: A00827
A/Molecule type: protein
A/Residues: 1-124 <BEI>
A/Note: about one-third of the molecules lacked Ala-1
C/Comment: The cuis is a rodent belonging to the same subfamily as the guinea pig.
C/Superfamily: pancreatic ribonuclease
C/Keywords: glycoprotein; hydrolase; nucleic acid digestion; pancreas
F:12,41,119/Active site: His, Lys, His #status predicted
F:26-84,40-95,58-110,65-72/Disulfide bonds: #status predicted
F:94/Binding site: carbohydrate (Asn) (covalent) #status absent

Query Match 22.5%; Score 131; DB 1; Length 124;
Best Local Similarity 30.6%; Pred. No. 3.9e-06;
Matches 37; Conservative 18; Mismatches 34; Indels 32; Gaps 7;

QY 5 LTFQKKHL-----TNRDVCNNIM---STNLFHCKDKNTFIYSRPEPVKAICKGIIA 54
Db 6 MKFQFQHMDSGDGHPDNTN--YCENMWRMSMTQGRCKPNTFVHEPLEAVQAVC----S 59

QY 55 SKNV-----LTTSEFYLSDCNVTISRP----CKYKLLKSTNTFCVTCEN--QAPVH 98
Db 60 QKNVPCNGQTCYQSHSSMRITDCVTSKSPKVCSEYEMTQAKSLIVACGTSVPVH 119

QY 99 F 99
Db 120 F 120

RESULT 7
A32474
angiogenin [validated] - bovine
N/Alternate names: angiogenesis factor
N/Contains: ribonuclease (EC 3.1.27.-)
C/Species: Bos primigenius taurus (cattle)
C/Date: 25-Sep-1989 #sequence_revision 25-Sep-1989 #text_change 15-Sep-2000
C/Accession: A32474; S02001; A30044; S48212

```

R;Bond, M.D.; Strydom, D.J.
 Biochemistry 28, 6110-6113, 1989
 A:Title: Amino acid sequence of bovine angiogenin.
 A:Reference number: A32474; MUID:89375344; PMID:2775757
 A:Accession: A32474
 A:Molecule type: protein
 A:Residues: 1-125 <BON>
 A:Experimental source: plasma
 R;Maes, P.; Damart, D.; Rommens, C.; Montreuil, J.; Spik, G.; Tartar, A.
 FEBS Lett. 241, 41-45, 1988
 A:Title: The complete amino acid sequence of bovine milk angiogenin.
 A:Reference number: S02001; MUID:8965101; PMID:3197838
 A:Accession: S02001
 A:Molecule type: protein
 A:Residues: 1-125 <MAE>
 A:Experimental source: milk
 R;Acharya, K.R.; Shapiro, R.; Riordan, J.F.; Vallee, B.L.
 submitted to the Brookhaven Protein Data Bank, January 1995
 A:Reference number: A65065; PDB:1AG1
 A:Contents: annotation; X-ray crystallography, 1.5 angstroms, residues 1-125
 R;Acharya, K.R.; Shapiro, R.; Riordan, J.F.; Vallee, B.L.
 Proc. Natl. Acad. Sci. U.S.A. 92, 2949-2953, 1995
 A:Title: Crystal structure of bovine angiogenin at 1.5 angstroms resolution.
 A:Reference number: A58315; MUID:95224057; PMID:7708754
 A:Contents: annotation; X-ray crystallography, 1.5 angstroms
 R;Lequin, O.; Albaret, C.; Bontems, F.; Spik, G.; Lallemand, J.Y.
 submitted to the Brookhaven Protein Data Bank, April 1996
 A:Reference number: A65709; PDB:1G10
 A:Contents: annotation; conformation by (1)H-NMR, residues 1-125
 R;Lequin, O.; Albaret, C.; Bontems, F.; Spik, G.; Lallemand, J.Y.
 Biochemistry 35, 8870-8880, 1996
 A:Title: Solution structure of bovine angiogenin by (1)H nuclear magnetic resonance spectroscopy.
 A:Reference number: A58821; MUID:96280645; PMID:8688423
 A:Contents: annotation; conformation by (1)H-NMR
 R;Reisdorf, C.; Abergel, D.; Bontems, F.; Lallemand, J.Y.; Decottignies, J.P.; Spik, G.
 Eur. J. Biochem. 224, 811-822, 1994
 A:Title: Proton resonance assignments and secondary structure of bovine angiogenin.
 A:Reference number: S48212; MUID:95010071; PMID:7925406
 A:Contents: annotation; conformation by (1)H-NMR
 C:Function:
 A:Description: hydrolyzes tRNA; induces vascularization of normal and malignant tissues
 C:Superfamily: pancreatic ribonuclease
 C:Keywords: angio genesis; hydrolase; nucleic acid degradation
 F:60-68/Region: receptor binding #status predicted
 F:14,41,115/Active site: His, Lys, His #status predicted
 F:27-82,40-93,58-108/Disulfide bonds: #status experimental

Query Match 22.0%; Score 128; DB 1; Length 125;
 Best Local Similarity 34.0%; Pred. No. 7.8e-06;
 Matches 33; Conservative 14; Mismatches 32; Indels 18; Gaps 5;
 QY 17 DVDCNNIMSTNLF--HCKDKNTFIYSRPEPVKAICKGIISKV 66
 DB 24 DEYCFNMKNRLTRPCDKRNTFIHGNKNDIKACE-----DRNGQYRGDLRIKSEFQI 79

QY 67 SDC---NVTSR--PCYKLLKSTNTFCVTCENQAPVHF 99
 DB 80 TTKKHGSSRPFCRYGATEDSRVIVVGCENGLPVHF 116

RESULT 8
 NRCU
 pancreatic ribonuclease (EC 3.1.27.5) - nutria (tentative sequence)
 N:Alternate names: RNase 1; RNase A
 C:Species: Myocastor coypus (nutria, coypu)
 C:Date: 24-Apr-1984 #sequence_revision 30-Sep-1988 #text_change 31-Mar-2000
 C:Accession: A00822
 R:van den Berg, A.; van den Hende-Timmer, L.; Beintema, J.J.
 Biochim. Biophys. Acta 453, 400-409, 1976
 A:Title: Isolation, properties and primary structure of coypu and chinchilla pancreatic
 A:Reference number: A90612; MUID:77065676; PMID:999896
 A:Accession: A00822
 A:Molecule type: protein

A:Residues: 1-128 <VAN>
 C:Superfamily: pancreatic ribonuclease
 C:Keywords: glycoprotein; hydrolase; nucleic acid digestion; pancreas
 F:12,41,119/Active site: His, Lys, His #status predicted
 F:26-84,40-95,58-110,65-72/Disulfide bonds: #status predicted
 F:34/Binding site: carbohydrate (Asn) (covalent) #status experimental

Query Match 21.6%; Score 126; DB 1; Length 128;
 Best Local Similarity 29.9%; Pred. No. 1.3e-05;
 Matches 35; Conservative 18; Mismatches 36; Indels 28; Gaps 7;
 QY 7 FOKKHL-----TNRDVCNNIM-STNLF--HCKDKNTFIYSRPEPVKAICKGIISKV 58
 DB 8 FERQHMDSRGSPSTNPYCNEMKSRNMTQGRCKPVTFFVHEPLADVQAVC-----FQKNV 63

QY 59 L-----TTSEFYLSDCNVTSRP-----CKYKLLKSTNTFCVTCENQ--APVHF 99
 DB 64 LCKNGQTCYQSNMNHITDCRVTSNSDYPNCYSRTSQBEKSIIVACEGNYVPVHF 120

RESULT 9
 NRWHK
 pancreatic ribonuclease (EC 3.1.27.5) - minke whale
 N:Alternate names: RNase 1; RNase A
 C:Species: Balaeoptera acutorostrata (minke whale, lesser rorqual)
 C:Date: 24-Apr-1984 #sequence_revision 24-Apr-1984 #text_change 03-Jun-1994
 C:Accession: A00818
 R:Emmens, M.; Welling, G.W.; Beintema, J.J.
 Biochem. J. 157, 317-323, 1976
 A:Title: The amino acid sequence of pike whale (lesser rorqual) pancreatic ribonuclease.
 A:Reference number: A00818; MUID:76277855; PMID:962870
 A:Accession: A00818
 A:Molecule type: protein
 A:Residues: 1-124 <EMW>
 C:Superfamily: pancreatic ribonuclease
 C:Keywords: glycoprotein; hydrolase; nucleic acid digestion; pancreas
 F:12,41,119/Active site: His, Lys, His #status predicted
 F:26-84,40-95,58-110,65-72/Disulfide bonds: #status predicted
 F:76/Binding site: carbohydrate (Asn) (covalent) (partial) #status experimental

Query Match 21.4%; Score 125; DB 1; Length 124;
 Best Local Similarity 28.6%; Pred. No. 1.5e-05;
 Matches 34; Conservative 15; Mismatches 42; Indels 28; Gaps 6;
 QY 5 LTFQKKHLNTRDVD-----CNNIMSTNLF---HCKDKNTFIYSRPEPVKAICKGIISKV 56
 DB 6 MKFQKHMDSGNSPGNNPNYCNQMMRRKMTQGRCKPVTFFVHESLEDVAVC-----SQK 61

QY 57 NVL-----TTSEFYLSDCNVTSRP-----CKYKLLKSTNTFCVTCENQ--APVHF 99
 DB 62 NVLCKNGRINCYESNSTWHITDCRGTGSSKYPNCAYKTSQKEKHIIIVACEGNYVPVHF 120

RESULT 10
 NRKS
 pancreatic ribonuclease (EC 3.1.27.5) - casiragua
 C:Species: Proechimys guairae (casiragua)
 C:Date: 17-Mar-1987 #sequence_revision 17-Mar-1987 #text_change 30-Sep-1993
 C:Accession: A00821
 R:Beintema, J.J.; Knol, G.; Martena, B.
 Biochim. Biophys. Acta 705, 102-110, 1982
 A:Title: The primary structures of pancreatic ribonucleases from African porcupine and C.
 A:Reference number: A90644; MUID:83000399; PMID:7115727
 A:Accession: A00821
 A:Molecule type: protein
 A:Residues: 1-128 <BEI>
 A>Note: residues 67-78 were positioned primarily by homology with other ribonucleases
 C:Superfamily: pancreatic ribonuclease
 C:Keywords: glycoprotein; hydrolase; nucleic acid digestion; pancreas
 F:12,41,119/Active site: His, Lys, His #status predicted
 F:26-84,40-95,58-110,65-72/Disulfide bonds: #status predicted
 F:34/Binding site: carbohydrate (Asn) (covalent) #status experimental

```

Query Match          20.6%; Score 120; DB 1; Length 128;
Best Local Similarity 29.9%; Pred. No. 5.1e-05;
Matches 35; Conservative 18; Mismatches 36; Indels 28; Gaps 7;

QY 7 FQKKHL-----TNTRDVDCNIM-STNLF--HCKDKNTFIYSRPEPKAICKGLIASKNV 58
      ||::||: ||::||: ||::||: ||::||: ||::||: ||::||: ||::||: ||::||:
Db 8 FQCHIDSSGSPSTPNYCNAMKSRNWTQERCKPNTFVHEPLADVOAVC-----FQKNV 63
      ||::||: ||::||: ||::||: ||::||: ||::||: ||::||: ||::||: ||::||:

QY 59 -----LTTSEFVLSDCNVTSR-----PCYKLUKKSNTTFCVTCENQ--APVHF 99
      ||::||: ||::||: ||::||: ||::||: ||::||: ||::||: ||::||: ||::||:
Db 64 PCRNGOSNCVESTSNMHTDRLTSLTSKFPDCLYRTSQEEKSIIVACEGNGPVVPHF 120
      ||::||: ||::||: ||::||: ||::||: ||::||: ||::||: ||::||: ||::||:

RESULT 11
A35932
angiogenin precursor - mouse
N;Alternate names: angiogenesis factor
N;Contains: ribonuclease (EC 3.1.1.27.-)
C;Species: Mus musculus (house mouse)
C;Date: 09-Nov-1990 #sequence_revision 09-Nov-1990 #text_change 18-Jun-1999
C;Accession: A35932
R;Bond, M.D.; Vallee, B.L.
Biochem. Biophys. Res. Commun. 171, 988-995, 1990
A;Title: Isolation and sequencing of mouse angiogenin DNA.
A;Reference number: A35932; MUID:91025023; PMID:2222458
A;Accession: A35932
A;Status: not compared with conceptual translation
A;Molecule type: DNA
A;Residues: 1-145 <BON>
A;Cross-references: GB:U22516; NID:g726325; PIDN:AAA91366.1; PID:g726326
C;Genetics:
A;Introns: #status absent
C;Function:
A;Description: hydrolyzes tRNA; induces vascularization of normal and malignant tissues
C;Superfamily: pancreatic ribonuclease
C;Keywords: angiogenesis; hydrolase; nucleic acid degradation; pyroglutamic acid
F;1-24/Domain: signal sequence #status predicted <SIG>
F;25-145/Product: angiogenin #status predicted <MAT>
F;25/Modified site: pyrrolidone carboxylic acid (Gln) (in mature form) #status predicted
F;37, 64, 137/Active site: His, Lys, His #status predicted
F;50-104, 63-115, 81-130/Disulfide bonds: #status predicted

Query Match          20.5%; Score 119.5; DB 1; Length 145;
Best Local Similarity 30.8%; Pred. No. 6.5e-05;
Matches 33; Conservative 12; Mismatches 45; Indels 17; Gaps 5;

QY 10 KHLTNTFDVD-----CNNIMSTNLF--HCKDKNTFIYSRPEPKAIC--KGIIASKN 57
      ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
Db 32 KFTQHHDAKPKGRDRCYRMMKRRSLTSPCKDVNTFFHGNKSNKAIKCAANGSPYREN 91
      ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||

QY 58 V-LTTSEFVLSDCNVTS-----RPPCKYLUKKSNTTFCVTCENQAPVHF 99
      ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
Db 92 LRMSKSPFQVTTCKHTGTSRPPCQYRAGSRHVVIAACENGLFVHF 138
      ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||

RESULT 12
NRGPB
pancreatic ribonuclease (EC 3.1.27.5) B - guinea pig (tentative sequence)
N;Alternate names: RNase IB
C;Species: Cavia porcellus (guinea pig)
C;Date: 24-Apr-1984 #sequence_revision 24-Apr-1984 #text_change 31-Mar-2000
C;Accession: A00826
R;Van den Berg, A.; van den Hende-Timmer, L.; Hofsteenge, J.; Gastra, W.; Beintema, J.J.
Eur. J. Biochem. 75, 91-100, 1977
A;Title: Guinea pig pancreatic ribonucleases. Isolation, properties, primary structure
A;Reference number: A91247; MUID:77185023; PMID:862624
A;Accession: A00826
A;Molecule type: protein
A;Residues: 1-128 <VAN>
A;Note: 64-Pro was also found
C;Superfamily: pancreatic ribonuclease
C;Keywords: glycoprotein; hydrolase; nucleic acid digestion; pancreas
F;12, 41, 119/Active site: His, Lys, His #status predicted

```

F:21,34/Binding site: carbohydrate (Asn) (covalent) #status experimental
F:26-84,40-95,58-110,65-72/Disulfide bonds: #status predicted

Query Match 20.4%; Score 119; DB 1; Length 128;
Best Local Similarity 28.3%; Pred. No. 6.4e-05;
Matches 34; Conservative 21; Mismatches 35; Indels 30; Gaps 7;

Qy 5 LTFQKKHL-----TNTRDVDCNIM---STNFLHCKDKNTFIYSRPPVKATCGKIIAS 55
Db :|||:::||:||||:||||:||||:||||:||||:||||:
 6 MKFORQHMDPEGSPFSNSNY-CNMVMIRRMNTQGRCKPVTFFHFSLADYQAVC----FQ 60
Qy ||||-----TTSEFYLDNCNVTSRP-----CYKLKKKSTNTFCVTCENQ--APVHF 99
Db ||||-----TTSEFYLDNCNVTSRP-----CYKLKKKSTNTFCVTCENQ--APVHF 120
 61 KNLVCKNGQTNCVSYSRMRITDCTRVSSSKFPNCSVRMSOAKSIIVACEGPVPYPVPHF

RESULT 13

NRCB

pancreatic ribonuclease (EC 3.1.27.5) - Chinchilla brevicaudata (tentative sequence)
N:Alternate names: RNase 1; RNase A
C:Species: Chinchilla brevicaudata, Chinchilla lanigera breviaudata
C>Date: 24-Apr-1984 #sequence_revision 30-Sep-1988 #text_change 31-Mar-2000
C:Accession: A00820
R:v van den Berg, A.; van den Hende-Timmer, L.; Beintema, J.J.
Biochim. Biophys. Acta 453, 400-409, 1976
A>Title: Isolation, properties and primary structure of coupy and chinchilla pancreatic
A:Reference number: A90612; PMID:77065676; PMID:999896
A:Accession: A00820
A:Molecule type: protein
A:Residues: 1-124 <VAN>
A>Note: a second component of chinchilla ribonuclease has 32-ASP
C:Superfamily: pancreatic ribonuclease
C:Keywords: glycoprotein; hydrolase; nucleic acid digestion; pancreas
F:12,41/Active site: His, Lys, His #status predicted
F:26-84,40-95,58-110,65-72/Disulfide bonds: #status predicted
F:34/Binding site: carbohydrate (Asn) (covalent) #status experimental

Query Match 20.1%; Score 117; DB 1; Length 124;
Best Local Similarity 26.9%; Pred. No. 9.9e-05;
Matches 32; Conservative 19; Mismatches 40; Indels 28; Gaps 5;

Qy 5 LTFQKKHL-----TNTRDVDCNIM---STNFLHCKDKNTFIYSRPPVKATCGKITASK 56
Db :|||:::||:||||:||||:||||:||||:||||:||||:
 6 MKFORQHMDSGSPTSNTANYCNEMKGRRMNTGYGCPVNTFVHEPLADVQAQC---FOK 61
Qy NV-----LTTSEFYLDNCNVTSRP-----CYKLKKKSTNTFCVTCENQ--APVHF 99
Db NV-----LTTSEFYLDNCNVTSRP-----CYKLKKKSTNTFCVTCENQ--APVHF 120
 62 NVPCKNQSNKYQSNNHHIDCLRTLSKNPKSVTSRENKIIVACGNPYVPVPHF

RESULT 14

B43825

angiogenin - rabbit
C:Species: Oryctolagus cuniculus (domestic rabbit)
C>Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 10-Sep-1999
C:Accession: S29833; B43825
R:Bord, M.D.; Strýdom, D.J.; Vallee, B.L.
Biochim. Biophys. Acta 1162, 177-186, 1993
A>Title: Characterization and sequencing of rabbit, pig and mouse angiogenins: discermin
A:Reference number: S29833; PMID:93192291; PMID:8448182
A:Accession: S29833
A>Status: preliminary
A:Molecule type: protein
A:Residues: 1-125 <BN>
A>Note: submitted to the Protein Sequence Database, December 1992
C:Superfamily: pancreatic ribonuclease
C:Keywords: pyroglutamic acid
F:1/Modified site: pyrrolidone carboxylic acid (Gln) #status experimental

Query Match 19.9%; Score 116; DB 1; Length 125;
Best Local Similarity 31.2%; Pred. No. 0.00013;
Matches 24; Conservative 13; Mismatches 32; Indels 8; Gaps 3;

```

QY 31 CKDKNTFIYSRPEPVKAICK---GITASKNV-ITTFEYLSDCNVTS-----RPEKYKLKK 82
      ||| |||: : : ||| : : ||| : : ||| : : ||| : : ||| : : ||| : : ||| : :
Db 39 CKDTNTFVHGNGKSIKDVCEKNGKPYGKNFRISKSFQVTTCKHVGSGSPWPPCRVYRATS 98
      ||| |||: : : ||| : : ||| : : ||| : : ||| : : ||| : : ||| : : ||| : :
QY 83 STNTFCVTCENQAPVHF 99
      : : ||| |||
Db 99 GSRNIVIACENGLFVHF 115
      : : ||| |||

```

RESULT 15

```

NRYV
pancreatic ribonuclease (EC 3.1.27.5) - capybara
N:Alternate names: RNase 1; RNase A
C:Species: Hydrochaeris hydrochaeris (capybara, carpincho)
C>Date: 03-Aug-1984 #sequence_revision 03-Aug-1984 #text_change 29-Oct-1999
C:Accession: A00824
R:Beintema, J.J.; Neuteboom, B.
J. Mol. Evol. 19, 145-152, 1983
A:Title: Origin of the duplicated ribonuclease gene in guinea-pig: comparison of the ami
A:Reference number: A92957; MUID:87036770; PMID:6571219
A:Accession: A00824
A:Molecule type: protein
A:Residues: 1-128 <BEI>
C:Superfamily: pancreatic ribonuclease
C:Keywords: hydrolase; nucleic acid digestion; pancreas
F:12,41,119/Active site: His, Lys, His #status predicted
F:26-34,40-58,58-110,65-72/Disulfide bonds: #status predicted

```

```

Query Match          19.9%; Score 116; DB 1; Length 128;
Best Local Similarity 27.8%; Pred. No. 0.00013;
Matches 32; Conservative 21; Mismatches 42; Indels 20; Gaps 6;

```

```

QY 5 LTFQKKHL-----TNRDVCNNIMSTNLF---HCKDKNTFIYSRPEPVKAIC-KGIAS 55
      : |||: : : ||| : : ||| : : ||| : : ||| : : ||| : : ||| : : ||| : :
Db 6 MKFQCHVDSEGSSSSNANYCNEMVRRKMTQDRCKPVNTFVHEPLADYQAVCFQKNVPC 65
      : |||: : : ||| : : ||| : : ||| : : ||| : : ||| : : ||| : : ||| : :
QY 56 KNVLT-----SEFYLSDCNVTSR-----PCKYKLKSTNTFCVTCENQ--APVHF 99
      ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||
Db 66 KNGQTCYQSYSSMHITDCRVTSNSKFPDCSVRTQAKSIIVVACEGNLYVPVHF 120
      ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||

```

```

Search completed: May 7, 2004, 21:54:53
Job time : 9.5276 secs

```


GenCore version 5.1.6
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OM protein - protein search, using sw model

Run on: May 7, 2004, 21:30:40 ; Search time 5.30402 Seconds
(without alignments)
1030.796 Million cell updates/sec

Title: US-09-961-400-6

Perfect score: 583

Sequence: 1 MQDWLTFQKKHLTNTRDVC.....TFCVTCENQAPVHFVGVGHC 105

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 141681 seqs, 52070155 residues

Total number of hits satisfying chosen parameters: 141681

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database : SwissProt_42.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match %	Length	DB ID	Description
1	556	95.4	104	1	RN30_RANPI
2	292	50.1	133	1	RN30_RANCA
3	285.5	49.0	111	1	LECS_RANJA
4	269.5	46.2	111	1	RNPL_RANCA
5	149	25.6	119	1	RNP_IGUG
6	131	22.5	124	1	RNP_GALMU
7	130.5	22.4	145	1	ANGR_MOUSE
8	130.5	22.4	146	1	ANGI_CERAE
9	128	22.0	148	1	ANGI_BOVIN
10	126	21.6	124	1	RNP_MYOCO
11	125	21.4	124	1	RNP_BALAC
12	121.5	20.8	146	1	ANGI_MACMU
13	120	20.6	128	1	RNP_PROGU
14	119.5	20.5	145	1	ANGI_MOUSE
15	119	20.4	128	1	RNP_CAVPO
16	118.5	20.3	146	1	ANGI_PAPHA
17	117	20.1	124	1	RNP_CHIBR
18	116	19.9	125	1	ANGI_RABIT
19	116	19.9	128	1	RNP_HYDHY
20	114	19.6	124	1	RNP_HIPAM
21	114	19.6	146	1	ANGI_MIOTA
22	113.5	19.5	147	1	RNS4_PANTR
23	113	19.4	147	1	ANGI_HUMAN
24	113	19.4	147	1	ANGI_PANTR
25	112	19.2	124	1	RNP_PIG
26	112	19.2	150	1	RNP_BOVIN
27	112	19.2	156	1	RNP_MYOGL
28	111.5	19.1	147	1	RNS4_HUMAN
29	111	19.0	128	1	RNP_HORSE
30	111	19.0	128	1	RNP_HYSCR
31	111	19.0	156	1	ECF3_MOUSE
32	111	19.0	167	1	RNBR_BOVIN
33	110.5	19.0	123	1	ANGI_PIG

34	110.5	19.0	155	1	ECPI_MOUSE
35	110	18.9	141	1	RNBR_GIRCA
36	110	18.9	146	1	ANGI_SAGOE
37	110	18.9	151	1	RNBR_AXIPR
38	109	18.7	123	1	ANG2_BOVIN
39	109	18.7	124	1	RNPA_CAVPO
40	109	18.7	124	1	RNP_AEPME
41	109	18.7	124	1	RNP_ANTAM
42	109	18.7	124	1	RNP_SHEEP
43	109	18.7	146	1	ANGI_SAISC
44	108.5	18.6	150	1	RNS6_SAISC
45	108	18.5	124	1	RNP_BUBBU

P97426 mus musculus
Q29542 giraffa cam
Q8wn62 saguinus oe
P87350 axis porcin
P80929 bos taurus
P00678 cavia porce
P07847 aepyceros m
P00668 antilocapra
P00661 ovis aries
Q8wn60 saimiri sci
O46529 saimiri sci
P00657 bubalus bub

ALIGNMENTS

RESULT 1
RN30_RANPI STANDARD; PRT; 104 AA.
AC P22059;
DT 01-AUG-1991 (Rel. 19, Created)
DT 01-FEB-1994 (Rel. 28, Last sequence update)
DT 28-FEB-2003 (Rel. 41, Last annotation update)
DE P-30 protein (EC 3.1.27.-) (Onconase).
OS Rana pipiens (Northern leopard frog).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Amphibia; Batrachia; Anura; Neobatrachia; Ranioidea; Ranidae; Rana.
OX NCBI_TaxID=8404;
RN [1]
RP SEQUENCE.
RC TISSUE=Embryo;
RX MEDLINE=91093131; PubMed=1985896;
RA Ardel W., Mikulski S.M., Shogen K.;
RT "Amino acid sequence of an anti-tumor protein from Rana pipiens
oocytes and early embryos. Homology to pancreatic ribonucleases.";
RL J. Biol. Chem. 266:245-251(1991).
RN [2]
RP 3D-STRUCTURE MODELING.
RX MEDLINE=93066156; PubMed=1438177;
RA Mosimann S.C., Johns K.L., Ardel W., Mikulski S.M., Shogen K.,
James M.N.G.;
RT "Comparative molecular modeling and crystallization of P-30 protein:
a novel antitumor protein of Rana pipiens oocytes and early
embryos.";
RL Proteins 14:392-400(1992).
RN [3]
RX X-RAY CRYSTALLOGRAPHY (1.7 ANGSTROMS).
RA Mosimann S.C., Ardel W., James M.N.G.;
RT "Refined 1.7 A X-ray crystallographic structure of P-30 protein, an
amphibian ribonuclease with anti-tumor activity.";
J. Mol. Biol. 236:1141-1153(1994).
CC -!- FUNCTION: Basic protein with antiproliferative/cytotoxic activity
against several tumor cell lines in vitro, as well as antitumor
in vivo. It exhibits a ribonuclease-like activity against high
molecular weight ribosomal RNA.
CC -!- DEVELOPMENTAL STAGE: Early embryos (up to four blastomere stage).
CC -!- SIMILARITY: Belongs to the pancreatic ribonuclease family.
PDB; 1ONC; 31-JAN-94.
DR InterPro; IPR001427; RNaseA.
DR Pfam; PF00074; rnaaseA; 1.
DR ProDom; PD000535; RNaseA; 1.
DR PROSITE; PS00127; RNASE_PANCREATIC; 1.
KW Hydrolase; Nuclease; Endonuclease; 3D-structure;
PYRROLIDONE CARBOXYLIC ACID.
FT MOD RES 1 10
FT ACT_SITE 10 10
FT ACT_SITE 31 31
FT ACT_SITE 97 97
FT DISULFID 19 68
FT DISULFID 30 75

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FT DISULFID 48 90
FT DISULFID 87 104
FT HELIX 3 10
FT STRAND 11 12
FT STRAND 19 22
FT TURN 23 24
FT TURN 26 30
FT STRAND 33 38
FT HELIX 41 45
FT HELIX 46 48
FT TURN 49 50
FT STRAND 55 58
FT STRAND 63 70
FT TURN 74 75
FT STRAND 77 84
FT STRAND 86 91
FT TURN 92 93
FT STRAND 94 101
SQ SEQUENCE 104 AA; 11845 MW; 22A7532F95E56B4 CRC64;

Query Match 95.4%; Score 556; DB 1; Length 104;
Best Local Similarity 96.2%; Pred. No. 9,6e-53;
Matches 100; Conservative 2; Mismatches 0; Indels 0; Gaps 0;

QY 2 QDWLTQKHLNTRDVCNINMSTNLFHCKDKNTFYSPKPKAICKGIIASKNVLTT 61
DB 1 QDWLTQKHLNTRDVCNINMSTNLFHCKDKNTFYSPKPKAICKGIIASKNVLTT 60

QY 62 SEFYLDNCVTSRCPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 105
DB 61 SEFYLDNCVTSRCPCKYKLLKSTNTFCVTCENQAPVHFVGVGSC 104

RESULT 2
RNPO RANCA
ID RNPO RANCA STANDARD; PRT; 133 AA.
AC P119T6; Q9PWR7;
DT 01-OCT-1989 (Rel. 12, Created)
DT 10-OCT-2003 (Rel. 42, Last sequence update)
DT 10-OCT-2003 (Rel. 42, Last annotation update)
DE Ribonuclease, oocytes precursor (EC 3.1.27.-) (RC-RNase) (Sialic acid-
DE binding lectin) (SBL-C).
GN RCR.
OS Rana catesbeiana (Bull frog).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Amphibia; Batrachia; Anura; Neobatrachia; Ranoidae; Ranidae; Rana.
OC NCBI_TaxID=8400;
RN [1]
RN SEQUENCE FROM N.A.
RC TISSUE=Liver;
RX Huang H.C., Wang S.C., Lu Y.J., Lu S.C., Liao Y.D.;
RX MEDLINE=98165825; PubMed=9497370;
RT "The Rana catesbeiana rcr gene encoding a cytotoxic ribonuclease.
RT Tissue distribution, cloning, purification, cytotoxicity, and active
RT residues for RNase activity.";
RL J. Biol. Chem. 273:6395-6401(1998).
RN [2]
RN SEQUENCE OF 23-133.
RC TISSUE=Egg;
RX MEDLINE=87299649; PubMed=3304421;
RX Titani K., Takio K., Kuwada M., Nitta K., Sakakibara F., Kawauchi H.,
RX Takayanagi G., Hakomori S.;
RT "Amino acid sequence of sialic acid binding lectin from frog (Rana
RT catesbeiana) eggs.";
RL Biochemistry 26:2189-2194(1987).
RN [3]
RN CHARACTERIZATION, AND SEQUENCE OF 81-101.
RX MEDLINE=92220613; PubMed=1373237;
RX Liao Y.-D.;
RX "A pyrimidine-guanine sequence-specific ribonuclease from Rana
RT catesbeiana (bullfrog) oocytes.";
RL Nucleic Acids Res. 20:1371-1377(1992).
RN [4]

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RP CHARACTERIZATION.
RC TISSUE=Egg;
RX MEDLINE=93192604; PubMed=8448385;
RA Nitta K., Oyama F., Oyama R., Sekiguchi K., Kawauchi H.,
RA Takayanagi Y., Hakomori S., Titani K.;
RT "Ribonuclease activity of sialic acid-binding lectin from Rana
RT catesbeiana eggs.";
RL Glycobiology 3:37-45(1993).
RN [5]
RN STRUCTURE BY NMR OF 23-133.
RX MEDLINE=98437383; PubMed=9761686;
RX Chang C.-F., Chen C., Chen Y.-C., Hom K., Huang R.-F., Huang T.H.;
RT "The solution structure of a cytotoxic ribonuclease from the oocytes
RT of Rana catesbeiana (bullfrog).";
RL J. Mol. Biol. 283:231-244(1998).
CC -!- FUNCTION: Preferentially cleaves single-stranded RNA at pyrimidine
CC residues with a 3'flanking guanine. Hydrolyzes poly(U) and poly(C)
CC as substrates, and prefers the former. The S-lectins in frog eggs
CC may be involved in the fertilization and development of the frog
CC embryo. This lectin agglutinates various animal cells, including
CC normal lymphocytes, erythrocytes, and fibroblasts of animal and
CC human origin. It is cytotoxic against several tumor cells.
CC -!- SUBUNIT: Monomer.
CC -!- SUBCELLULAR LOCATION: Secreted.
CC -!- SIMILARITY: Belongs to the pancreatic ribonuclease family.
CC
CC This SWISS-PROT entry is copyright. It is produced through a collaboration
CC between the Swiss Institute of Bioinformatics and the EMBL outstation -
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CC or send an email to license@isb-sib.ch).
CC
CC EMBL; AF039104; AAD10702.1; -.
DR PIR; A27121; A27121.
DR PDB; 1BC4; 28-OCT-98.
DR PDB; 1M07; 21-JAN-03.
DR InterPro; IPR001427; RNaseA.
DR Pfam; PF00074; RNaseA; 1.
DR ProDom; PD000535; RNaseA; 1.
DR SMART; SM00092; RNase_Pc; 1.
DR PROSITE; PS00127; RNASE_PANCREATIC; 1.
DR Hydrolase; Nuclease; Endonuclease; Sialic acid; Lectin; 3D-structure;
KW Signal; Pyrrolidone carboxylic acid.
FT SIGNAL 1 22
FT CHAIN 23 133 RIBONUCLEASE, OOCYTES.
FT MOD_RES 23 23 PYRROLIDONE CARBOXYLIC ACID.
FT ACT_SITE 32 32
FT ACT_SITE 57 57
FT ACT_SITE 125 125
FT DISULFID 41 93
FT DISULFID 56 103
FT DISULFID 74 118
FT DISULFID 115 132
FT HELIX 25 32
FT HELIX 41 45
FT TURN 48 49
FT STRAND 59 63
FT STRAND 67 73
FT TURN 74 74
FT TURN 79 84
FT STRAND 90 95
FT STRAND 105 110
FT STRAND 114 119
FT TURN 120 121
FT STRAND 122 129
SQ SEQUENCE 133 AA; 14762 MW; A7D62594F7D16F0C CRC64;

Query Match 50.1%; Score 292; DB 1; Length 133;
Best Local Similarity 49.5%; Pred. No. 2.1e-24;
Matches 55; Conservative 16; Mismatches 32; Indels 8; Gaps 3;

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```

QY 2 QDWLTQKFKHLTNRDVCNNIMSTNLF----HCKDKNTFYISRPVPAKCKGIIASKN 57
Db 23 QNWATFOQKHINTPIINCNTMDNNIYVGGCKRVNTFISSATTKAICTGVI-NMN 81
QY 58 VLTTSFYLSDC---NVTSPCKYKLLKSTNFCVTCENQAPVHFVGVGHC 105
Db 82 VLSSTRFQNLCTCTSTITPFCPSYSSRTETNYICVKCENQYPVHFAGIGRC 132

RESULT 3
LECS_RANJA
ID LECs_RANJA STANDARD; PRT; 111 AA.
AC P18839;
DT 01-NOV-1990 (Rel. 16, Created)
DT 01-FEB-1994 (Rel. 28, Last sequence update)
DT 10-OCT-2003 (Rel. 42, Last annotation update)
DE Sialic acid-binding lectin (EC 3.1.27.-).
OS Rana japonica (Japanese redbellied frog).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Amphibia; Batrachia; Anura; Neobatrachia; Ranioidea; Ranidae; Rana.
OX NCBI_TaxID=8402;
RN [1]
RP SEQUENCE, AND DISULFIDE BONDS.
RC TISSUE=Egg;
RX MEDLINE=91035319; PubMed=2229005;
RA Kamiya Y., Oyama F., Oyama R., Sakakibara F., Nitta K., Kawauchi H.,
RA Takayanagi Y., Titani K.;
RT "Amino acid sequence of a lectin from Japanese frog (Rana japonica)
RT eggs.";
RL J. Biochem. 108:139-143(1990).
CC -!- FUNCTION: The S-lectins in frog eggs may be involved in the
CC fertilization and development of the frog embryo. This lectin
CC preferentially agglutinate a large variety of tumor cells, but it
CC does not agglutinate non-transformed cells and erythrocytes.
CC -!- SUBUNIT: Monomer.
CC -!- SUBCELLULAR LOCATION: Secreted.
CC -!- SIMILARITY: Belongs to the pancreatic ribonuclease family.
DR PIR; JX0120; JX0120.
DR HSSP; P11916; LBC4.
DR InterPro; IPR001427; RNaseA.
DR Pfam; PF00074; RNaseA; 1.
DR ProDom; PD000535; RNaseA; 1.
DR SMART; SM00092; RNaseA; 1.
DR PROSITE; PS00127; RNASE_PANCREATIC; 1.
KW Hydroxylase; Nuclease; Endonuclease; Pyridolone carboxylic acid.
FT ACT_SITE 10 10 PYRROLIDONE CARBOXYLIC ACID.
FT ACT_SITE 35 35 BY SIMILARITY.
FT ACT_SITE 104 104 BY SIMILARITY.
FT DISULFID 19 72 BY SIMILARITY.
FT DISULFID 34 82 BY SIMILARITY.
FT DISULFID 52 97 BY SIMILARITY.
FT DISULFID 94 111 PROBABLE.
SQ SEQUENCE 111 AA; 12326 MW; FDEBDDF3834ED679 CRC64;

Query Match 49.0%; Score 285.5; DB 1; Length 111;
Best Local Similarity 45.0%; Pred. No. 8.4e-24;
Matches 50; Conservative 19; Mismatches 35; Indels 7; Gaps 2;

QY 2 QDWLTQKFKHLTNRDVCNNIMSTNLF----HCKDKNTFYISRPVPAKCKGIIASKN 57
Db 1 QNWATFOQKHINTPIINCNTMDNNIYVGGCKRVNTFISSATTKAICTGVI-NMN 60
QY 58 VLTTSFYLSDC---NVTSPCKYKLLKSTNFCVTCENQAPVHFVGVGHC 105
Db 61 VLSSTRFQNLCTCTSTITPFCPSYSSRTETNYICVKCENRLPVHFAGIGRC 111

RESULT 4
RNPL_RANJA
ID RNPL_RANJA STANDARD; PRT; 111 AA.
AC P14626;

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DT 01-APR-1990 (Rel. 14, Created)
DT 01-FEB-1994 (Rel. 28, Last sequence update)
DT 28-FEB-2003 (Rel. 41, Last annotation update)
DE Ribonuclease, liver (EC 3.1.27.5).
OS Rana catesbeiana (Bull frog).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Amphibia; Batrachia; Anura; Neobatrachia; Ranioidea; Ranidae; Rana.
OX NCBI_TaxID=8400;
RN [1]
RP SEQUENCE.
RC TISSUE=Liver;
RX MEDLINE=90130374; PubMed=2613682;
RA Nitta R., Katayama N., Okabe Y., Iwama M., Watanabe H., Abe Y.,
RA Okazaki T., Ohgi K., Irie M.;
RT "Primary structure of a ribonuclease from bullfrog (Rana catesbeiana)
RT liver.";
RL J. Biochem. 106:729-735(1989).
CC -!- CATALYTIC ACTIVITY: Endonucleolytic cleavage to nucleoside 3'-
CC phosphates and 3'-phosphooligonucleotides ending in C-P or U-P
CC with 2',3'-cyclic phosphate intermediates.
CC -!- SUBCELLULAR LOCATION: Secreted.
CC -!- SIMILARITY: Belongs to the pancreatic ribonuclease family.
DR PIR; JX0085; JX0085.
DR HSSP; P11916; LBC4.
DR InterPro; IPR001427; RNaseA.
DR Pfam; PF00074; RNaseA; 1.
DR ProDom; PD000535; RNaseA; 1.
DR SMART; SM00092; RNaseA; 1.
DR PROSITE; PS00127; RNASE_PANCREATIC; 1.
KW Hydroxylase; Nuclease; Endonuclease; Pyridolone carboxylic acid.
FT ACT_SITE 10 10 PYRROLIDONE CARBOXYLIC ACID.
FT ACT_SITE 35 35 BY SIMILARITY.
FT ACT_SITE 104 104 BY SIMILARITY.
FT DISULFID 19 72 BY SIMILARITY.
FT DISULFID 34 82 BY SIMILARITY.
FT DISULFID 52 97 BY SIMILARITY.
FT DISULFID 94 111 PROBABLE.
SQ SEQUENCE 111 AA; 12461 MW; D64BA72456C10788 CRC64;

Query Match 46.2%; Score 269.5; DB 1; Length 111;
Best Local Similarity 43.2%; Pred. No. 4.3e-22;
Matches 48; Conservative 19; Mismatches 37; Indels 7; Gaps 2;

QY 2 QDWLTQKFKHLTNRDVCNNIMSTNLF----HCKDKNTFYISRPVPAKCKGIIASKN 57
Db 1 QNWATFOQKHINTPIINCNTMDNNIYVGGCKRVNTFISSATTKAICTGVI-NMN 60
QY 58 VLTTSFYLSDC---NVTSPCKYKLLKSTNFCVTCENQAPVHFVGVGHC 105
Db 61 VLSSTRFQNLCTCTSTITPFCPSYSSRTETNYICVKCENRLPVHFAGIGRC 111

RESULT 5
RNP_IGUG
ID RNP_IGUG STANDARD; PRT; 119 AA.
AC P80287;
DT 01-FEB-1994 (Rel. 28, Created)
DT 01-FEB-1994 (Rel. 28, Last sequence update)
DE Ribonuclease pancreatic (EC 3.1.27.5) (RNase A).
OS Igana iguana (Common iguana).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Lepidosauria; Squamata; Iguania; Iguanidae; Iguaninae; Iguana.
OX NCBI_TaxID=8517;
RN [1]
RP SEQUENCE.
RC TISSUE=Pancreas;
RX MEDLINE=94139745; PubMed=8307028;
RA Zhao W., Beintema J.J., Hofsteenge J.;
RT "The amino acid sequence of iguana (Iguana iguana) pancreatic
RT ribonuclease.";
RL Eur. J. Biochem. 219:641-646(1994).

```

CC -!- CATALYTIC ACTIVITY: Endonucleolytic cleavage to nucleoside 3'-
 CC phosphates and 3'-phosphooligonucleotides ending in C-P or U-P
 CC with 2',3'-cyclic phosphate intermediates.
 CC -!- SUBCELLULAR LOCATION: Secreted.
 CC -!- TISSUE SPECIFICITY: Pancreas.
 CC -!- SIMILARITY: Belongs to the pancreatic ribonuclease family.
 DR PIR; S41111; S41111.
 DR HSP; P00656; ILSQ.
 DR InterPro; IPR001427; RNaseA.
 DR Pfam; PF00074; RNaseA; 1.
 DR PRINTS; PR00794; RIBONUCLEASE.
 DR ProDom; PD000535; RNaseA; 1.
 DR SMART; SM00092; RNase_Pc; 1.
 DR PROSITE; PS00127; RNASE_PANCREATIC; 1.
 KW Hydrolyase; Nuclease; Endonuclease; Pyrrolidone carboxylic acid.
 FT MOD_RES 1 1 PYRROLIDONE CARBOXYLIC ACID.
 FT DISULFID 25 80 BY SIMILARITY.
 FT DISULFID 39 91 BY SIMILARITY.
 FT DISULFID 57 106 BY SIMILARITY.
 FT ACT_SITE 10 10 BY SIMILARITY.
 FT ACT_SITE 40 40 BY SIMILARITY.
 FT ACT_SITE 113 113 BY SIMILARITY.
 SQ SEQUENCE 119 AA; 13324 MW; 6072FB5B7B15BD5A CRC64;

Query Match 25.6%; Score 149; DB 1; Length 119;
 Best Local Similarity 30.7%; Pred. No. 3.6e-09;
 Matches 35; Conservative 19; Mismatches 44; Indels 16; Gaps 5;

QY 2 QDWLTPQKKHL-----TNRDVCNNIM---STNLFHCKDKNTFYSRPEPVKALC-K 50
 |||:||||:
 Db 1 QDWSSFNKHIDYPETSASPNAYCDLMQRRNLNPTKCKTRNTFVHASPSEIQVCGSG 60

QY 51 GIIASKNLTTSP-FYLSDC-----NVTSPCKYKXKSTNTFCVTCENQAPVHF 99
 |||:||||:
 Db 61 GTHYEDNLDSNESFDLTDCKNVGGTAPSSCKYNGTPTGKRIIRIACENNQPVHF 114

RESULT 6
 RNP GALMU STANDARD; PRT; 124 AA.
 AC P00680;
 DT 21-JUL-1986 (Rel. 01, Created)
 DT 21-JUL-1986 (Rel. 01, Last sequence update)
 DT 28-FEB-2003 (Rel. 41, Last annotation update)
 DE Ribonuclease pancreatic (EC 3.1.27.5) (RNase 1) (RNase A).
 GN RNASE1 OR RNS1.
 OS Galea musteloides (Cuis).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Euthera; Rodentia; Hystricognathi; Caviidae; Galea.
 OX NCBI_TaxID=10146;
 RN [1]
 RP SEQUENCE.
 RX MEDLINE=87036770; PubMed=6571219;
 RA Beintema J.J., Neuteboom B.;
 RT "Origin of the duplicated ribonuclease gene in guinea-pig: comparison
 RT of the amino acid sequences with those of two close relatives:
 RT capybara and cuis ribonuclease.";
 RL J. Mol. Evol. 19:145-152(1983).
 CC -!- CATALYTIC ACTIVITY: Endonucleolytic cleavage to nucleoside 3'-
 CC phosphates and 3'-phosphooligonucleotides ending in C-P or U-P
 CC with 2',3'-cyclic phosphate intermediates.
 CC -!- SUBCELLULAR LOCATION: Secreted.
 CC -!- TISSUE SPECIFICITY: Pancreas.
 CC -!- SIMILARITY: Belongs to the pancreatic ribonuclease family.
 DR PIR; A00827; NRUI.
 DR HSP; P00656; LSRN.
 DR InterPro; IPR001427; RNaseA.
 DR Pfam; PF00074; RNaseA; 1.
 DR PRINTS; PR00794; RIBONUCLEASE.
 DR ProDom; PD000535; RNaseA; 1.
 DR SMART; SM00092; RNase_Pc; 1.
 DR PROSITE; PS00127; RNASE_PANCREATIC; 1.
 KW Hydrolyase; Nuclease; Endonuclease.

FT DISULFID 26 84 BY SIMILARITY.
 FT DISULFID 40 95 BY SIMILARITY.
 FT DISULFID 58 110 BY SIMILARITY.
 FT DISULFID 65 72 BY SIMILARITY.
 FT ACT_SITE 12 12 BY SIMILARITY.
 FT ACT_SITE 41 41 BY SIMILARITY.
 FT ACT_SITE 119 119 BY SIMILARITY.
 FT VARIANT 1 1 MISSING (IN 1/3 OF THE MOLECULES).
 SQ SEQUENCE 124 AA; 13870 MW; 609C7E251A7BBA25 CRC64;

Query Match 22.5%; Score 131; DB 1; Length 124;
 Best Local Similarity 30.6%; Pred. No. 3.1e-07;
 Matches 37; Conservative 18; Mismatches 34; Indels 32; Gaps 7;

QY 5 LTFQKKHL-----TNRDVCNNIM---STNLFHCKDKNTFYSRPEPVKALCGLIA 54
 :|||:||||:
 Db 6 MKFQHQHMDSDGHPDNTN--YCENMVRRSTQGRCKPVNIFVHEPLEAVQVC-----S 59
 |||:||||:
 QY 55 SKNV-----LTSFYLSDCNVTSRP---CKYKXKSTNTFCVTCEN--QAPVH 98
 |||:||||:
 Db 60 QKNVPCKNGQTCYQSHSSMRITDCRTSSSKYPNCYSYRMTQAKSIIIVACEGTPSPVH 119
 |||:||||:
 QY 99 F 99
 Db 120 F 120

RESULT 7
 ANGR MOUSE STANDARD; PRT; 145 AA.
 ID ANGR_MOUSE
 AC Q64438;
 DT 01-NOV-1997 (Rel. 35, Created)
 DT 01-NOV-1997 (Rel. 35, Last sequence update)
 DT 28-FEB-2003 (Rel. 41, Last annotation update)
 DE Angiogenin-related protein precursor.
 GN ANGRP.
 OS Mus musculus (Mouse).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Euthera; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
 OX NCBI_TaxID=10090;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC STRAIN=129; TISSUE=Liver;
 RX MEDLINE=96079109; PubMed=8530072;
 RA Brown W.E., Nobile V., Subramanian V., Shapiro R.;
 RT "The mouse angiogenin gene family: structures of an angiogenin-related
 RT protein gene and two pseudogenes";
 RL Genomics 29:200-206(1995).
 CC -!- SIMILARITY: Belongs to the pancreatic ribonuclease family.
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 CC -----
 DR EMBL; U22519; AAA91367.1; -.
 DR HSP; P03950; IAA4.
 DR MGD; MGI:104984; Angrp.
 DR InterPro; IPR001427; RNaseA.
 DR Pfam; PF00074; RNaseA; 1.
 DR PRINTS; PR00794; RIBONUCLEASE.
 DR ProDom; PD000535; RNaseA; 1.
 DR SMART; SM00092; RNase_Pc; 1.
 DR PROSITE; PS00127; RNASE_PANCREATIC; 1.
 KW Signal; Hydrolase; Nuclease; Endonuclease;
 KW Pyrrolidone carboxylic acid.
 FT SIGNAL 1 24 POTENTIAL.
 FT CHAIN 25 145 ANGIOGENIN-RELATED PROTEIN.
 FT MOD_RES 25 25 PYRROLIDONE CARBOXYLIC ACID (BY
 FT SIMILARITY).

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FT ACT_SITE 37 37 BY SIMILARITY.
FT ACT_SITE 64 64 BY SIMILARITY.
FT ACT_SITE 137 137 BY SIMILARITY.
FT DISULFID 50 104 BY SIMILARITY.
FT DISULFID 63 115 BY SIMILARITY.
FT DISULFID 81 130 BY SIMILARITY.
SQ SEQUENCE 145 AA; 16612 MW; 29A6EB814429C4AD CRC64;

Query Match 22.4%; Score 130.5; DB 1; Length 145;
Best Local Similarity 38.2%; Pred. No. 4.2e-07;
Matches 29; Conservative 11; Mismatches 29; Indels 7; Gaps 3;

QY 31 CKDKNTFLYSRPPVPAIC--KGLIASKNV-LTTSFYSLDCNVTSR-----PCKYKLKKS 83
Db 63 CKDVNTFIHDTKNNIAICGKSGYRNLRISKRFSQVTTCTHKGRSPRPCKRYASKG 122
QY 84 TMTFCVTCENQAPVHF 99
Db 123 FRIIIGCENGWVHF 138

RESULT 8
ANGI CERAE
ID ANGI CERAE STANDARD; PRT; 146 AA.
AC Q8WNG6;
DT 28-FEB-2003 (Rel. 41, Created)
DT 28-FEB-2003 (Rel. 41, Last sequence update)
DT 28-FEB-2003 (Rel. 41, Last annotation update)
DE Angiogenin precursor (EC 3.1.27.-) (Ribonuclease 5) (RNase 5).
GN ANG OR RNASE5.
OS Cercopithecus aethiops (Green monkey) (Grivet).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Cercopithecoidea;
OC Cercopithecinae; Cercopithecus.
OX NCBI_TaxID=9534;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=21918422; PubMed=11919285;
RA Zhang J., Rosenberg H.F.;
RT "Diversifying selection of the tumor-growth promoter angiogenin in
RT primate evolution.";
RL Mol. Biol. Evol. 19:438-445(2002).
CC -!- FUNCTION: May function as a tRNA-specific ribonuclease that binds
CC to actin on the surface of endothelial cells; once bound,
CC angiogenin is endocytosed and translocated to the nucleus, thereby
CC promoting the endothelial invasiveness necessary for blood vessel
CC formation. Angiogenin induces vascularization of normal and
CC malignant tissues. Abolishes protein synthesis by specifically
CC hydrolyzing cellular tRNAs (By similarity).
CC -!- SUBCELLULAR LOCATION: Secreted.
CC -!- SIMILARITY: Belongs to the pancreatic ribonuclease family.
CC
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CC
CC -----
CC EMBL; AF441664; AAL61646.1; --
CC InterPro; IPR001427; RNaseA.
CC Pfam; PF00074; rnaseA; 1.
CC PRINTS; PR00794; RIBONUCLEASE.
CC ProDom; PD000535; RNaseA; 1.
CC SMART; SM00092; RNase PC; 1.
CC PROSITE; PS00127; RNASE_PANCREATIC; 1.
CC Hydrolase; Nuclease; Endonuclease; Angiogenesis;
CC Protein synthesis inhibitor; Signal; Pyrrolidone carboxylic acid.
KW SIGNAL 1 24
FT CHAIN 25 146
FT MOD_RES 25 25 PYRROLIDONE CARBOXYLIC ACID (BY
FT SIMILARITY).

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FT ACT_SITE 37 37 BY SIMILARITY.
FT ACT_SITE 64 64 BY SIMILARITY.
FT ACT_SITE 138 138 BY SIMILARITY.
FT DISULFID 50 105 BY SIMILARITY.
FT DISULFID 63 116 BY SIMILARITY.
FT DISULFID 81 131 BY SIMILARITY.
SQ SEQUENCE 146 AA; 16444 MW; 27860112E85B8DF9 CRC64;

Query Match 22.4%; Score 130.5; DB 1; Length 146;
Best Local Similarity 30.7%; Pred. No. 4.3e-07;
Matches 31; Conservative 17; Mismatches 30; Indels 23; Gaps 4;

QY 6 TFOKHLITNRDVCNNIMSTNLFHCKDKNTFTYSRPPVPAIC---KGLIASKNV-LTT 61
Db 53 TWRRLTSP-----CKDINTFIHGRNHKAIKCGDNGNPFYGENLRISK 97
QY 62 SEFYSLDCNVTS-----RPCKYKLKKSNTFCVTCENQAPVH 98
Db 98 SPFQVTCNLGGSPRPCKYRATGRGNIVVGCENGLPVH 138

RESULT 9
ANGI BOVIN
ID ANGI BOVIN STANDARD; PRT; 148 AA.
AC P10152; Q9GKP9;
DT 01-MAR-1989 (Rel. 10, Created)
DT 28-FEB-2003 (Rel. 41, Last sequence update)
DT 15-MAR-2004 (Rel. 43, Last annotation update)
DE Angiogenin-1 precursor (EC 3.1.27.-).
GN ANG1 OR ANG.
OS Bos taurus (Bovine).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
OC Bovidae; Bovinae; Bos.
OX NCBI_TaxID=9913;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=89375344; PubMed=2775757;
RA Bond M.D., Strydom D.J.;
RT "Isolation of bovine angiogenin using a placental ribonuclease
RT inhibitor binding assay.";
RL Biochemistry 28:6110-6113(1989).
RN [4]
RP CHARACTERIZATION, AND SEQUENCE OF 25-55.
RX TISSUE-Plasma;
RX MEDLINE=89118214; PubMed=3064806;
RA Bond M.D., Vallee B.L.;
RT "Isolation of bovine angiogenin using a placental ribonuclease
RT inhibitor binding assay.";
RL Biochemistry 27:6282-6287(1988).
RN [5]
RP X-RAY CRYSTALLOGRAPHY (1.5 ANGSTROMS).
RX MEDLINE=95224057; PubMed=7708754;
RA Acharya K.R., Shapiro R., Riordan J.F., Vallee B.L.;
RT "Crystal structure of bovine angiogenin at 1.5-A resolution.";
RL Proc. Natl. Acad. Sci. U.S.A. 92:2949-2953(1995).
RN [6]
RP STRUCTURE BY NMR.
RX MEDLINE=96280645; PubMed=8688423;
RA Lequin O., Albarret C., Bontems F., Spik G., Lallemand J.-Y.;

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RT "Solution structure of bovine angiogenin by 1H nuclear magnetic
 resonance spectroscopy.";
 RL Biochemistry 35:8870-8880(1996).
 CC -!- FUNCTION: May function as a tRNA-specific ribonuclease that binds
 CC to actin on the surface of endothelial cells; once bound,
 CC angiogenin is endocytosed and translocated to the nucleus, thereby
 CC promoting the endothelial invasiveness necessary for blood vessel
 CC formation. Angiogenin induces vascularization of normal and
 CC malignant tissues. Abolishes protein synthesis by specifically
 CC hydrolyzing cellular tRNAs. Binds tightly to placental
 CC ribonuclease inhibitor and has very low ribonuclease activity.
 CC -!- SUBCELLULAR LOCATION: Secreted.
 CC -!- TISSUE SPECIFICITY: Serum and milk.
 CC -!- SIMILARITY: Belongs to the pancreatic ribonuclease family.
 CC
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 CC or send an email to license@isb-sib.ch).
 CC
 CC EMBL; AF135124; AAG47631.1; -;
 DR PDB; 1AGI; 03-APR-96.
 DR PDB; 1GHO; 07-DEC-96.
 DR InterPro; IPR001427; RNaseA.
 DR Pfam; PF00074; rnasea; 1.
 DR PRINTS; PR00794; RIBONUCLEASE.
 DR ProDom; PD000535; RNaseA; 1.
 DR SMART; SM00092; RNase_Pc; 1.
 DR PROSITE; PS00127; RNASE_PANCREATIC; 1.
 DR Hydrolyase; Nuclease; Endonuclease; Angiogenesis;
 KW Protein synthesis inhibitor; Signal; 3D-structure.
 FT SIGNAL 1 23
 FT CHAIN 24 148 ANGIOGENIN-1.
 FT ACT_SITE 37 37
 FT ACT_SITE 64 64
 FT ACT_SITE 138 138
 FT DISULFID 50 105
 FT DISULFID 63 116
 FT DISULFID 81 131
 SQ SEQUENCE 148 AA; 16969 MW; B7999124CB523DD CRC64;
 Query Match 22.0%; Score 128; DB 1; Length 148;
 Best Local Similarity 34.0%; Pred. No. 8e-07;
 Matches 33; Conservative 14; Mismatches 32; Indels 18; Gaps 5;
 QY 17 DVDNNIMSTNLF--HCKDKNTFYSRPEVPKAIKGIILASKN-----VLTTSFYL 66
 Db 47 DEYCFNMKNRRLTRPKCKDNTFIHGKNDIKAIKE-----DRNGQPYRGDLRIKSEFQI 102
 QY 67 SDC---NVTSR-PCKYKLSKSTNTFCVTCENQAPVHF 99
 Db 103 TICKHKGSGSPCRYGATEDSRVIVVGCENGLPVHF 139
 RESULT 10
 RNP MYOC
 ID_RNP_MYOC STANDARD; PRT; 128 AA.
 AC P00676;
 DT 21-JUL-1986 (Rel. 01, Created)
 DT 21-JUL-1986 (Rel. 01, Last sequence update)
 DT 28-FEB-2003 (Rel. 41, Last annotation update)
 DE Ribonuclease pancreatic (EC 3.1.27.5) (RNase 1) (RNase A).
 GN RNASE1 OR RNS1.
 OS Myocastor coypus (Coypu) (Nutria).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Rodentia; Hystricognathi; Myocastoridae;
 OC Myocastor.
 OX NCBI_TaxID=10157;
 RN [1]
 RP SEQUENCE.

RC TISSUE=Pancreas;
 RX MEDLINE=77065676; PubMed=99896;
 RA van den Berg A., van den Hende-Timmer L., Beintema J.J.;
 RT "Isolation, properties and primary structure of coypu and chinchilla
 RT pancreatic ribonuclease.";
 RL Biochim. Biophys. Acta 453:400-409(1976).
 CC -!- CATALYTIC ACTIVITY: Endonucleolytic cleavage to nucleoside 3'-
 CC phosphates and 3'-phosphooligonucleotides ending in C-P or U-P
 CC with 2',3'-cyclic phosphate intermediates.
 CC -!- SUBCELLULAR LOCATION: Secreted.
 CC -!- TISSUE SPECIFICITY: Pancreas.
 CC -!- SIMILARITY: Belongs to the pancreatic ribonuclease family.
 DR PIR; A00822; NRCU.
 DR HSSP; P00656; 1SRN.
 DR InterPro; IPR001427; RNaseA.
 DR Pfam; PF00074; rnasea; 1.
 DR PRINTS; PR00794; RIBONUCLEASE.
 DR ProDom; PD000535; RNaseA; 1.
 DR SMART; SM00092; RNase_Pc; 1.
 DR PROSITE; PS00127; RNASE_PANCREATIC; 1.
 DR Hydrolyase; Nuclease; Endonuclease; Glycoprotein.
 KW DISULFID 26 84 BY SIMILARITY.
 FT DISULFID 40 95 BY SIMILARITY.
 FT DISULFID 58 110 BY SIMILARITY.
 FT DISULFID 65 72 BY SIMILARITY.
 FT ACT_SITE 12 12 BY SIMILARITY.
 FT ACT_SITE 41 41 BY SIMILARITY.
 FT ACT_SITE 119 119 BY SIMILARITY.
 FT CARBOHYD 34 34 N-LINKED (GLCNAC...);
 SQ SEQUENCE 128 AA; 14267 MW; 4EB924B52B445832 CRC64;
 Query Match 21.6%; Score 126; DB 1; Length 128;
 Best Local Similarity 29.9%; Pred. No. 1.1e-06;
 Matches 35; Conservative 18; Mismatches 36; Indels 28; Gaps 7;
 QY 7 FQKKHL-----TNTRDVDNNIM-STNLF--HCKDKNTFYSRPEVPKAIKGIILASKNV 58
 Db 8 FERQHMDSRGSPSTNPNYCNEMKSRNMTQGRCKPVNTFVHEPLADVQAVC----FQKNV 63
 QY 59 L-----TTSEFVLSDCNVTSRP---CKYKLSKSTNTFCVTCENQ--APVHF 99
 Db 64 LCKNGQTCYQSNNSNMHTDCRVTSNSDPNCYSRISQBEKSIVVACENPYVVFHF 120
 RESULT 11
 RNP BALAC
 ID_RNP_BALAC STANDARD; PRT; 124 AA.
 AC P00673;
 DT 21-JUL-1986 (Rel. 01, Created)
 DT 21-JUL-1986 (Rel. 01, Last sequence update)
 DT 10-OCT-2003 (Rel. 42, Last annotation update)
 DE Ribonuclease pancreatic (EC 3.1.27.5) (RNase 1) (RNase A).
 GN RNASE1 OR RNS1.
 OS Balaenoptera acutorostrata (Minke whale) (lesser rorqual).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Cetartiodactyla; Cetacea; Mysticeti;
 OC Balaenopteridae; Balaenoptera.
 OX NCBI_TaxID=9767;
 RN [1]
 RP SEQUENCE.
 RX MEDLINE=76277855; PubMed=962870;
 RA Emmens M., Welling G.W., Beintema J.J.;
 RT "The amino acid sequence of pike-whale (lesser-rorqual) pancreatic
 RT ribonuclease.";
 RL Biochem. J. 157:317-323(1976).
 CC -!- CATALYTIC ACTIVITY: Endonucleolytic cleavage to nucleoside 3'-
 CC phosphates and 3'-phosphooligonucleotides ending in C-P or U-P
 CC with 2',3'-cyclic phosphate intermediates.
 CC -!- SUBCELLULAR LOCATION: Secreted.
 CC -!- TISSUE SPECIFICITY: Pancreas.
 CC -!- SIMILARITY: Belongs to the pancreatic ribonuclease family.
 DR PIR; A00818; NRWHE.
 DR HSSP; P00656; 1SRN.

DR	PfDom; PD000535; RNaseA; 1.
DR	SMART; SM00092; RNase_Pc; 1.
DR	PROSITE; PS00127; RNASE_PANCREATIC; 1.
KW	Hydrolase; Nuclease; Endonuclease; Angiogenesis;
KW	Protein synthesis inhibitor; Signal; Pyrrolidone carboxylic acid.
FT	SIGNAL 1 24
FT	CHAIN 25 146
FT	MOD_RES 25 25
FT	ACT_SITE 37 37
FT	ACT_SITE 64 64
FT	ACT_SITE 138 138
FT	DISULFID 50 105
FT	DISULFID 63 116
FT	DISULFID 81 131
FT	SEQUENCE 146 AA; E39A89215DB2A2A4 CRC64;
QY	Query Match 20.8%; Score 121.5; DB 1; Length 146;
QY	Best Local Similarity 28.7%; Pred.No. 3.9e-06;
QY	Matches 29; Conservative 17; Mismatches 32; Indels 23; Gaps
QY	6 TFQKHLTNRDVCNNINSTNLVHCKDKNTFIYSRPEPVKAIC--KGITASKNV-LTT 61
Db	53 TMRRRLTSP-----CKDINTVFHGRRHITAICGDENGSPYGGNLRIST 97
QY	62 SEFYLDQCNTVS----RPCKYKLKSTNTFCVTENQAPVH 98
Db	98 SPFOVTVTKLGGSPFPQCYRATGRSRNIVVGCEGLP VH 138
RESULT 13	
RNP_PROGU	STANDARD; PRT; 128 AA.
ID _RNP_PROGU	AC P04059;
DT 01-NOV-1986	(Rel. 03, Created)
DT 01-NOV-1986	(Rel. 03, Last sequence update)
DT 28-FEB-2003	(Rel. 41, Last annotation update)
DE Ribonuclease pancreatic	(EC 3.1.27.5) (RNase 1) (RNase A).
GN RNASE1 OR RNS1.	
OS Proechimys guirae	(Casiragua).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;	
OC Mammalia; Eutheria; Rodentia; Hystricognathi; Echimyidae; Proechimys.	
ON NCBI_TaxID=10163;	
OX [1]	
RC TISSUE=Pancreas;	
RX MEDLINE=83000399; PubMed=7115727;	
RA Beintema J.J., Knol G., Martena B.;	
RT "The primary structures of pancreatic ribonucleases from African	
RL porcupine and casiragua, two hystricomorph rodent species.";	
RL Biochim. Biophys. Acta 705:102-110(1982).	
CC -!- CATALYTIC ACTIVITY: Endonucleolytic cleavage to nucleoside 3'-	
CC phosphates and 3'-phosphooligonucleotides ending in C-P or U-P	
CC with 2',3'-cyclic phosphate intermediates.	
CC -!- SUBCELLULAR LOCATION: Secreted.	
CC -!- TISSUE SPECIFICITY: Pancreas.	
CC -!- SIMILARITY: Belongs to the pancreatic ribonuclease family.	
PIR; A00821; NRKS.	
HSSP; P00656; LSRN.	
InterPro; IPR001427; RNaseA.	
Pfam; PF00074; rna5a; 1.	
PRINTS; PR00794; RIBONUCLEASE.	
DR PfDom; PD000535; RNaseA; 1.	
DR SMART; SM00092; RNase_Pc; 1.	
DR PROSITE; PS00127; RNASE_PANCREATIC; 1.	
KW Hydrolase; Nuclease; Endonuclease; Glycoprotein.	
FT DISULFID 26 84	BY SIMILARITY.
FT DISULFID 40 95	BY SIMILARITY.
FT DISULFID 58 110	BY SIMILARITY.
FT DISULFID 65 72	BY SIMILARITY.
FT ACT_SITE 12 12	BY SIMILARITY.
FT ACT_SITE 41 41	BY SIMILARITY.
FT ACT_SITE 119 119	BY SIMILARITY.

```

FT CARBOHYD 34 34 N-LINKED (GLCNAC...).
SQ SEQUENCE 128 AA; 14244 MW; 2DB58093A9D3C936 CRC64;

Query Match
Best Local Similarity 20.6%; Score 120; DB 1; Length 128;
Matches 35; Conservative 18; Mismatches 36; Indels 28; Gaps 7;

QY 7 FOKKHL-----TNRDVCNNIM-STNLF--HCKDKNTFYSRPEPVKAICKGIATSKNV 58
DQ 8 FORQHDSSGSPSTNPNYCNAMKSRMTQERCKPVNTFVHEPLADVQAVC-----PQKNV 63
QY 59 -----LTTSEYLSDCNVTSR-----PCKYKLKSKTNTFCVCENQ--APVHF 99
DQ 64 PCKNGOSCYESTSNVHITDRLTNSKFPDCLYTSQEKSIIVACBGNPYVPVHF 120

RESULT 14
ANGI_MOUSE
ID ANGI_MOUSE STANDARD; PRT; 145 AA.
AC F21570;
DT 01-MAY-1991 (Rel. 18, Created)
DT 01-MAY-1991 (Rel. 18, Last sequence update)
DT 15-MAR-2004 (Rel. 43, Last annotation update)
DE Angiogenin precursor (EC 3.1.27.-) (Ribonuclease 5) (RNase 5).
GN ANG.
OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX NCBI_TaxID=10090;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=91025023; PubMed=2222458;
RA Bond M.D., Vallee B.L.;
RT "Isolation and sequencing of mouse angiogenin DNA.";
RL Biochem. Biophys. Res. Commun. 171:988-995(1990).
RN [2]
RP SEQUENCE FROM N.A.
RC STRAIN=FVB/N; TISSUE=Liver;
RX MEDLINE=22388257; PubMed=12477932;
RA Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,
RA Klausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,
RA Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
RA Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,
RA Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
RA Scapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,
RA Brownstein M.J., Ustin T.B., Toshiyuki S., Carninci P., Prange C.,
RA Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,
RA Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,
RA Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
RA Villalón D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,
RA Fahy J., Helton E., Kettman M., Madan A., Rodriguez S., Sanchez A.,
RA Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,
RA Blakesley R.W., Touchman J.W., Green E.D., Dickinson M.C.,
RA Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M.,
RA Butterfield Y.S.N., Krzywinski M.I., Skalska U., Smalus D.E.,
RA Schnerch A., Schein J.E., Jones S.J.M., Marra M.A.;
RT "Generation and initial analysis of more than 15,000 full-length
human and mouse cDNA sequences.";
RL Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).
RN [3]
RP PARTIAL SEQUENCE.
RC TISSUE=Serum;
RX MEDLINE=93192291; PubMed=848182;
RA Bond M.D., Strydom D.J., Vallee B.L.;
RT "Characterization and sequencing of rabbit, pig and mouse
angiogenins: discernment of functionally important residues and
regions.";
RL Biochim. Biophys. Acta 1162:177-186(1993).
CC -!- FUNCTION: May function as a tRNA-specific ribonuclease that binds
to actin on the surface of endothelial cells; once bound, thereby
angiogenin is endocytosed and translocated to the nucleus, thereby
promoting the endothelial invasiveness necessary for blood vessel
formation. Angiogenin induces vascularization of normal and
```


GenCore version 5.1.6
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OM protein - protein search, using sw model

Run on: May 7, 2004, 21:25:55 ; Search time 44.7895 Seconds
(without alignments)

662.376 Million cell updates/sec

Title: US-09-961-400-8

Perfect score: 584

Sequence: 1 MQDWLTFQKKLNTTRDVDC.....TFCVTCENQAPVHFVGVGHC 105

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 1586107 seqs, 282547505 residues

Total number of hits satisfying chosen parameters: 1586107

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database : A Geneseqp29Jan04:*

- 1: geneseqp1980s:*
- 2: geneseqp1990s:*
- 3: geneseqp2000s:*
- 4: geneseqp2001s:*
- 5: geneseqp2002s:*
- 6: geneseqp2003as:*
- 7: geneseqp2003bs:*
- 8: geneseqp2004s:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Match	Query Length	DB ID	Description
1	572	97.9	105	2	AAY28869
2	570	97.6	105	2	AAY28867
3	567	97.1	104	2	AAY28866
4	565	96.7	104	2	AAY28865
5	565	96.7	105	2	AAY28871
6	565	96.7	127	2	AAY28879
7	560	95.9	104	2	AAY28870
8	545	93.3	105	2	AAW06544
9	545	93.3	105	2	AAW35123
10	545	93.3	105	2	AAW39400
11	545	93.3	355	2	AAW35125
12	545	93.3	358	2	AAW35130
13	543	93.0	104	2	AAW30301
14	543	93.0	104	4	AAW351666
15	543	93.0	104	5	ABG32650 Northern
16	543	93.0	112	2	AAW35118
17	543	93.0	251	2	AAW35134
18	543	93.0	254	2	AAW35135
19	543	93.0	355	2	AAW35133
20	543	93.0	355	2	AAW35129
21	543	93.0	366	2	AAW35132
22	543	93.0	379	2	AAW35126
23	542	92.8	104	2	AAW30302
24	540	92.5	104	2	AAW12344 Protein w
25	540	92.5	104	2	AAW47303 ONCONASE

26	540	92.5	104	2	AAW00736	Aaw00736 Protein d
27	540	92.5	104	2	AAW14065	Aaw14065 Onconase
28	540	92.5	104	2	AAW06543	Aaw06543 Antitumou
29	540	92.5	104	2	AAW88233	Aaw88233 Rana pipi
30	540	92.5	104	2	AAW33322	Aay33322 Frog onco
31	540	92.5	104	4	AAW31667	Aab31667 Amino aci
32	540	92.5	104	5	ABG31617	Abg31617 Northern
33	538	92.1	105	2	AAW35116	Aaw35116 R. pipien
34	538	92.1	106	2	AAW35122	Aaw35122 R. pipien
35	538	92.1	107	2	AAW35117	Aaw35117 R. pipien
36	537	92.0	105	2	AAW35115	Aaw35115 R. pipien
37	535	91.6	104	2	AAW18224	Aaw18224 Antitumou
38	534	91.4	358	2	AAW35127	Aaw35127 R. pipien
39	534	91.4	365	2	AAW35131	Aaw35131 R. pipien
40	515	88.2	107	2	AAW35120	Aaw35120 R. pipien
41	492	82.5	360	2	AAW35128	Aaw35128 R. pipien
42	470.5	80.6	111	2	AAW35121	Aaw35121 R. pipien
43	432	74.0	83	2	AAW35119	Aaw35119 R. pipien
44	432	74.0	83	2	AAW88234	Aaw88234 Rana pipi
45	283	48.5	111	2	AAW33321	Aay33321 Frog lect

ALIGNMENTS

RESULT 1
AAY28869
ID AAY28869 standard; protein; 105 AA.
XX
AC AAY28869;
XX
DT 25-JAN-2000 (first entry)
XX
DE Recombinant Met (-1) RapLRL Met23Leu- (His) 6 protein.
XX
KW Recombinant Met (-1) Rana pipiens ribonuclease Met23Leu- (His) 6; RapLRL;
KW CD22; covalently bound; LL2 antibody; ligand binding moiety; RNase; hCG;
KW cancerous B cell; Kaposi's sarcoma; human chorionic gonadotropin; hCG;
KW signal peptide; recombinant ribonuclease; cytotoxic fusion protein;
KW cancer; frog; autoimmune disease.
XX
OS Rana pipiens.
OS Synthetic.
XX
FH Key Location/Qualifiers
FT Misc-difference 1 /note= "Met not found in wild type RapLRL"
FT Misc-difference 1 /note= "(His)6 histidine tag attached to N-terminal Met"
FT Misc-difference 24 /note= "Wild type Met replaced with Leu"
XX
WO9950398-A2.
XX
FD 07-OCT-1999.
XX
PF 26-MAR-1999; 99WO-US0006641.
XX
PR 27-MAR-1998; 98US-0079751P.
XX
PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Rybak SM, Newton DL;
XX
DR WPI; 1999-610847/52.
XX
DR N-PSDB; AAZ08127.
XX
PT New recombinant ribonucleases, used for killing target cells, e.g. for
PT treating cancers, viral infections or autoimmune diseases.
XX
PS Claim 4; Page 59; 71pp; English.
XX
CC The present sequence is a recombinant Rana pipiens ribonuclease protein

CC (RaPLR1) with Met at position 1 attached to (His)6 tag and Met24Leu.
 CC Carboxy terminal end of recombinant RaPLR1 has a covalently bound ligand
 CC binding moiety, which can be a LL2 antibody directed against CD22 on
 CC cancerous B cells or human chorionic gonadotropin (hCG) effective
 CC against Kaposi's sarcoma cells. Recombinant ribonucleases can be
 CC expressed in bacteria without an N-terminal methionine due to the
 CC presence of a signal peptide that is cleaved by bacteria. The soluble
 CC expression of ribonuclease allows the proteins to be fused in-frame with
 CC ligand binding moieties to form cytotoxic fusion proteins. They can be
 CC used for treatment of cancer and autoimmune diseases
 XX
 SQ Sequence 105 AA;

Query Match 97.9%; Score 572; DB 2; Length 105;
 Best Local Similarity 98.1%; Pred. No. 8e-63; Mismatches 0; Gaps 0;
 Matches 103; Conservative 0; Indels 2; Indels 0; Gaps 0;

QY 1 QMDWLTFOKGLHNTNRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 60
 DB 1 QMDWLTFOKGLHNTNRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 60
 QY 61 TFEFVLSDCNATSRPCKYKLLKSKSTNTFCVTCENQAPVHFVGVGHC 105
 DB 61 TSEFVLSDCNVTISRPRCKYKLLKSKSTNTFCVTCENQAPVHFVGVGHC 105

RESULT 2

AA28867
 ID AAY28867 standard; protein; 105 AA.

XX
 AC AAY28867;

XX 25-JAN-2000 (first entry)

XX Recombinant Met (-1) RaPLR1.

XX Recombinant Met (-1) Rana pipiens ribonuclease; RaPLR1; CD22; RNase;
 KW covalently bound; LL2 antibody; ligand binding moiety; cancerous B cell;
 KW Kaposi's sarcoma; human chorionic gonadotropin; hCG; signal peptide;
 KW recombinant ribonuclease; cytotoxic fusion protein; cancer; frog;
 KW autoimmune disease.

XX Rana pipiens.

OS Synthetic.

XX Key Location/Qualifiers

FT Misc-difference 1 /note= "Met not found in wild type RaPLR1"

XX WO9950398-A2.

XX 07-OCT-1999.

XX 26-MAR-1999; 99WO-US006641.

XX 27-MAR-1998; 98US-0079751P.

XX (USSH) US DEPT HEALTH & HUMAN SERVICES.

XX Rybak SM, Newton DL;

XX WPI; 1999-610847/52.

XX N-PSDB; AAZ08126.

XX New recombinant ribonucleases, used for killing target cells, e.g. for
 PT treating cancers, viral infections or autoimmune diseases.

XX Claim 34; Page 57; 71pp; English.

XX The present sequence is a recombinant Rana pipiens ribonuclease (RaPLR1)
 CC protein with Met at position 1. Carboxy terminal end of recombinant
 CC RaPLR1 has a covalently bound ligand binding moiety, which can be a LL2
 CC antibody directed against CD22 on cancerous B cells or human chorionic

CC gonadotropin (hCG) effective against Kaposi's sarcoma cells. Recombinant
 CC ribonucleases can be expressed in bacteria without an N-terminal
 CC methionine due to the presence of a signal peptide that is cleaved by
 CC bacteria. The soluble expression of ribonuclease allows the proteins to
 CC be fused in-frame with ligand binding moieties to form cytotoxic fusion
 CC proteins. They can be used for treatment of cancer and autoimmune
 CC diseases
 XX
 SQ Sequence 105 AA;

Query Match 97.6%; Score 570; DB 2; Length 105;
 Best Local Similarity 97.1%; Pred. No. 1.4e-62;
 Matches 102; Conservative 1; Mismatches 2; Indels 0; Gaps 0;

QY 1 QMDWLTFOKGLHNTNRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 60

DB 1 QMDWLTFOKGLHNTNRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 60

QY 61 TFEFVLSDCNATSRPCKYKLLKSKSTNTFCVTCENQAPVHFVGVGHC 105

DB 61 TSEFVLSDCNVTISRPRCKYKLLKSKSTNTFCVTCENQAPVHFVGVGHC 105

RESULT 3

AA28866
 ID AAY28866 standard; protein; 104 AA.

XX
 AC AAY28866;

XX 25-JAN-2000 (first entry)

XX Recombinant RaPLR1 Met23Leu amino acid sequence.

XX Recombinant Rana pipiens ribonuclease; RaPLR1 Met23Leu; covalently bound;
 KW LL2 antibody; ligand binding moiety; CD22; cancerous B cell; RNase;
 KW Kaposi's sarcoma; human chorionic gonadotropin; hCG; signal peptide;
 KW recombinant ribonuclease; cytotoxic fusion protein; cancer; frog;
 KW autoimmune disease.

XX Rana pipiens.

OS Synthetic.

XX Key Location/Qualifiers

FT Misc-difference 23 /note= "Wild type Met replaced with Leu"

XX WO9950398-A2.

XX 07-OCT-1999.

XX 26-MAR-1999; 99WO-US006641.

XX 27-MAR-1998; 98US-0079751P.

XX (USSH) US DEPT HEALTH & HUMAN SERVICES.

XX Rybak SM, Newton DL;

XX WPI; 1999-610847/52.

XX N-PSDB; AAZ08125.

XX New recombinant ribonucleases, used for killing target cells, e.g. for
 PT treating cancers, viral infections or autoimmune diseases.

XX Claim 34; Page 56; 71pp; English.

XX The present sequence is a recombinant Rana pipiens ribonuclease (RaPLR1)
 CC protein with Met23Leu. Carboxy terminal end of recombinant RaPLR1 has a
 CC covalently bound ligand binding moiety, which can be a LL2 antibody
 CC directed against CD22 on cancerous B cells or human chorionic
 CC gonadotropin (hCG) effective against Kaposi's sarcoma cells. Recombinant
 CC ribonucleases can be expressed in bacteria without an N-terminal
 CC methionine due to the presence of a signal peptide that is cleaved by

CC bacteria. The soluble expression of ribonuclease allows the proteins to
 CC be fused in-frame with ligand binding moieties to form cytotoxic fusion
 CC proteins. They can be used for treatment of cancer and autoimmune
 CC diseases

XX Sequence 104 AA;

Query Match 97.1%; Score 567; DB 2; Length 104;
 Best Local Similarity 98.1%; Pred. No. 3.3e-62;
 Matches 102; Conservative 0; Mismatches 2; Indels 0; Gaps 0;

QY 2 QDWLTFQKKHLNTRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 61
 DB 1 QDWLTFQKKHLNTRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 60
 QY 62 FEFYSDCNATSRPCKYKLLKKSNTFCVTCENQAPVHFVGVC 105
 DB 61 SEFYSDCNVTSRPFCKYKLLKKSNTFCVTCENQAPVHFVGVC 104

RESULT 4
 AAY28865
 ID AAY28865 standard; protein; 104 AA.
 AC AAY28865;
 XX

DT 25-JAN-2000 (first entry)
 DE Rana pipiens liver ribonuclease (RaPLR1).
 XX
 KW Rana pipiens liver ribonuclease; RaPLR1; covalently bound; LL2 antibody;
 KW ligand binding moiety; CD22; cancerous B cell; Kaposi's Sarcoma; frog;
 KW human chorionic gonadotropin; hCG; recombinant ribonuclease; RNase;
 KW signal peptide; cytotoxic fusion protein; cancer; autoimmune disease.
 XX

OS Rana pipiens.

XX WO9950398-A2.

PN 07-OCT-1999.

PD 26-MAR-1999; 99WO-US006641.

PF 27-MAR-1998; 98US-0079751P.

XX (USSH) US DEPT HEALTH & HUMAN SERVICES.

PA Rybak SM, Newton DL;

XX WPI; 1999-610847/52.

DR N-PSDB; AAZ08129.

XX New recombinant ribonucleases, used for killing target cells, e.g. for

PT treating cancers, viral infections or autoimmune diseases.

XX Claim 1; Page 55; 71pp; English.

XX The present sequence is Rana pipiens liver ribonuclease (RaPLR1) protein.
 CC Carboxy terminal end of RaPLR1 has a covalently bound ligand binding
 CC moiety, which can be a LL2 antibody directed against CD22 on cancerous B
 CC cells or human chorionic gonadotropin (hCG) effective against Kaposi's
 CC Sarcoma cells. Recombinant ribonucleases can be expressed in bacteria
 CC without an N-terminal methionine due to the presence of a signal peptide
 CC that is cleaved by bacteria. The soluble expression of ribonuclease
 CC allows the proteins to be fused in-frame with ligand binding moieties to
 CC form cytotoxic fusion proteins. They can be used for treatment of cancer
 CC and autoimmune diseases

XX Sequence 104 AA;

Query Match 96.7%; Score 565; DB 2; Length 104;
 Best Local Similarity 97.1%; Pred. No. 5.9e-62;
 Matches 101; Conservative 1; Mismatches 2; Indels 0; Gaps 0;

QY 2 QDWLTFQKKHLNTRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 61
 DB 1 QDWLTFQKKHLNTRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 60

QY 62 FEFYSDCNATSRPCKYKLLKKSNTFCVTCENQAPVHFVGVC 105
 DB 61 SEFYSDCNVTSRPFCKYKLLKKSNTFCVTCENQAPVHFVGVC 104

RESULT 5
 AAY28871
 ID AAY28871 standard; protein; 105 AA.
 XX AAY28871;
 AC AAY28871;
 XX 25-JAN-2000 (first entry)
 DT Recombinant Met (-1) RaPLR1 GlnSer amino acid sequence.
 DE

XX Recombinant Met (-1) Rana pipiens ribonuclease GlnSer; RaPLR1; CD22;
 KW covalently bound; LL2 antibody; ligand binding moiety; cancerous B cell;
 KW Kaposi's sarcoma; human chorionic gonadotropin; hCG; signal peptide;
 KW recombinant ribonuclease; cytotoxic fusion protein; cancer; frog;
 KW autoimmune disease; RNase.

XX Rana pipiens.

OS Synthetic.

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XX 11-MAR-1998; 98US-0077557P.
PR (IMMU-) IMMUNOMEDICS INC.
XX Goldenberg DM, Hansen H, Leung S;
XX WPI; 1999-551416/46.
DR N-PSDB; AA19767.
XX A new recombinant Onconase used to treat, e.g. colon cancer.
PT Example 1; Fig 1; 42pp; English.
PS
XX This sequence represents recombinant frog Onconase. Onconase has
CC ribonuclease and anti-tumour activity. The cDNA was produced via PCR
CC (using primers AA19768-219769) of two synthetic DNAs whose sequences
CC encoded most of the N-terminal or the C-terminal amino acids of mature
CC Onconase. The two PCR products generated encoded either the N-terminal 54
CC amino acids (minus the initial methionine) or the C-terminal 51 amino
CC acids, and were ligated in frame at an NruI site. The cDNA was then
CC subcloned into a vector e.g., pluescript, where the ATG initiation codon
CC was ligated to the cDNA. After expression in E. coli, the recombinant
CC protein was purified. The initial N-formyl methionine was cleaved off and
CC the now N-terminal glutamate residue cyclised to form an N-terminal
CC pyroglutamate. The pyroglutamate residue forms part of the phosphate
CC binding pocket of Onconase and is essential for both the ribonuclease and anti
CC -tumour activity. Onconase is a 12 kD ribonuclease which causes cell
CC death as a result of potent inhibition of protein synthesis by a
CC mechanism involving inactivation of cellular RNA. It is not inhibited by
CC mammalian placental ribonuclease inhibitor, which may explain its
CC enhanced cytotoxicity relative to mammalian enzymes. It has anti-tumour
CC activity against a variety of solid tumours e.g, colon or pancreatic
CC cancers, and can be used alone or in combination with other anti-cancer
CC agents such as tamoxifen. When used as an anti-tumour agent, Onconase can
CC be conjugated to a marker which targets it to a specific cell type
XX
SQ Sequence 105 AA;
Query Match 93.3%; Score 545; DB 2; Length 105;
Best Local Similarity 92.4%; Pred. No. 1.8e-59;
Matches 97; Conservative 4; Mismatches 4; Indels 0; Gaps 0;
QY 1 MQDWLTFQKKHLNTRDVCNNILSTNLFHCKDKNTFIYSRPFVKAICKGIASKNVLT 60
Db 1 MQDWLTFQKKHINTKDVDCDNIMSTNLFHCKDKNTFIYSRPFVKAICKGIASKNVLT 60
QY 61 TFEFYLSDCNATSRPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 105
Db 61 TSEFYLSDCNVTSRPCKYKLLKSTNKFCVTCENQAPVHFVGVGSC 105
RESULT 11
AAW35125
ID AAW35125 standard; protein; 355 AA.
XX AAW35125;
XX 20-APR-1998 (first entry)
XX R. pipiens recombinant RNase rOnc fusion protein 1.
DE RNase A; ribonuclease; cytotoxic; onconase; nOnc; immunofusion;
KW tumour cell growth; frog.
XX Rana pipiens.
OS Synthetic.
XX WO9731116-A2.
XX 28-AUG-1997.
XX 19-FEB-1997; 97WO-US002588.
XX 21-FEB-1996; 96US-0011800P.
XX (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX Rybak SM, Newton DL, Boque L, Wlodawer A;
XX WPI; 1997-435168/40.
XX N-PSDB; AAT94968.

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XX 21-FEB-1996; 96US-0011800P.
XX (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX Rybak SM, Newton DL, Boque L, Wlodawer A;
XX WPI; 1997-435168/40.
DR N-PSDB; AAT94963.
XX Ribonuclease molecules based on native Onconase - used for killing cells,
PT particularly tumour cells.
XX Disclosure; Page 67; 90pp; English.
XX Sequences AAW35125 to AAW35135 represent recombinant fusion proteins
CC (rOnc) which are modifications of the RNase Onconase (rOnc). Such
CC novel ribonuclease molecules are highly cytotoxic and can be used alone
CC or to form chemical conjugates or to target recombinant immunofusions.
CC They are used particularly for decreasing tumour cell growth. They can
CC also be used for cell separation in vitro by selectively killing unwanted
CC types of cells, e.g. in bone marrow prior to transplantation into a
CC patient undergoing marrow ablation by radiation or for killing leukaemia
CC cells or T-cells that would cause graft versus host disease. The toxins
CC can also be used to selectively kill unwanted cells in culture. The new
CC ribonucleases have increased cytotoxic activity compared to nOnc and also
CC lower immunogenicity in humans
XX
SQ Sequence 355 AA;
Query Match 93.3%; Score 545; DB 2; Length 355;
Best Local Similarity 92.4%; Pred. No. 8.9e-59;
Matches 97; Conservative 4; Mismatches 4; Indels 0; Gaps 0;
QY 1 MQDWLTFQKKHLNTRDVCNNILSTNLFHCKDKNTFIYSRPFVKAICKGIASKNVLT 60
Db 251 MEDWLTFQKKHINTKDVDCDNIMSTNLFHCKDKNTFIYSRPFVKAICKGIASKNVLT 310
QY 61 TFEFYLSDCNATSRPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 105
Db 311 TSEFYLSDCNVTSRPCKYKLLKSTNKFCVTCENQAPVHFVGVGSC 355
RESULT 12
AAW35130
ID AAW35130 standard; protein; 358 AA.
XX AAW35130;
XX 20-APR-1998 (first entry)
XX R. pipiens recombinant RNase rOnc fusion protein 6.
DE RNase A; ribonuclease; cytotoxic; onconase; nOnc; immunofusion;
KW tumour cell growth; frog.
XX Rana pipiens.
OS Synthetic.
XX WO9731116-A2.
XX 28-AUG-1997.
XX 19-FEB-1997; 97WO-US002588.
XX 21-FEB-1996; 96US-0011800P.
XX (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX Rybak SM, Newton DL, Boque L, Wlodawer A;
XX WPI; 1997-435168/40.
XX N-PSDB; AAT94968.

```

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XX Ribonuclease molecules based on native Onconase - used for killing cells,
PT particularly tumour cells.
XX
XX
XX Disclosure; Page 72; 90pp; English.
XX
XX Sequences AAW35125 to AAW35135 represent recombinant fusion proteins
CC (rOnc) which are modifications of the RNase Onconase (RTM) (rOnc). Such
CC novel ribonuclease molecules are highly cytotoxic and can be used alone
CC or to form chemical conjugates or to target recombinant immunofusions.
CC They are used particularly for decreasing tumour cell growth. They can
CC also be used for cell separation in vitro by selectively killing unwanted
CC types of cells, e.g. in bone marrow prior to transplantation into a
CC patient undergoing marrow ablation by radiation, or for killing leukaemia
CC cells or T-cells that would cause graft versus host disease. The toxins
CC can also be used to selectively kill unwanted cells in culture. The new
CC ribonucleases have increased cytotoxic activity compared to rOnc and also
CC lower immunogenicity in humans
XX
XX Sequence 358 AA;
SQ
  Query Match          93.3%; Score 545; DB 2; Length 358;
  Best Local Similarity 92.4%; Pred. No. 9e-59;
  Matches 97; Conservative 4; Mismatches 0; Indels 0; Gaps 0;

QY 1 MQDLTFQKKHLTNRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 60
DB 1 MEDLTFQKKHITNRDVCDDNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 60

QY 61 TFEYLSDCNATSRPCKYKLSKSTNTFCVTCENQAPVHFVGVGHC 105
DB 61 TSEYLSDCNVTSRPCKYKLSKSTNFKCVTCENQAPVHFVGVGSC 105

RESULT 13
AAW30301
ID AAW30301 standard; protein; 104 AA.
XX
XX AAW30301;
XX
XX 09-JUN-1998 (first entry)
XX
XX Recombinant onc protein.
XX
XX Onc; onconase; ribonuclease; frog; antitumour; pancreatic cancer;
XX human immunodeficiency virus type-1; HIV1; replication.
XX
XX Rana pipiens.
XX
XX WO9738112-A1.
XX
XX 16-OCT-1997.
XX
XX 04-APR-1997; 97WO-US005675.
XX
XX 04-APR-1996; 96US-00626288.
XX
XX (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
XX Youle RJ, Vasandani VM, Wu Y, Boix E, Ardelt W;
XX WPI; 1997-512725/47.
XX
XX Recombinant Onc protein with glutamine residue at position 1 - useful as
XX antitumour and antiviral agent, also as cell culture selection agent.
XX
XX Claim 1; Page 28; 35pp; English.
XX
XX This sequence represents a recombinant Onc protein comprising a 104 amino
XX acid sequence having Gln at position 1. Onc, a ribonuclease from Rana
XX pipiens oocytes, is known as an antitumour agent (e.g. for treating
XX pancreatic cancer) and inhibitor of human immunodeficiency virus type-1
XX replication. It can be used therapeutically or as a cell-culture

CC selection agent, e.g. to identify gene therapy compositions able to
CC inhibit tumour growth
XX
XX Sequence 104 AA;
SQ
  Query Match          93.0%; Score 543; DB 2; Length 104;
  Best Local Similarity 93.3%; Pred. No. 3.2e-59;
  Matches 97; Conservative 3; Mismatches 4; Indels 0; Gaps 0;

QY 2 QDWLTFQKKHLTNRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 61
DB 1 QDWLTFQKKHITNRDVCDDNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 60

QY 62 FEFYLSDCNATSRPCKYKLSKSTNTFCVTCENQAPVHFVGVGHC 105
DB 61 SEFYLSDCNVTSRPCKYKLSKSTNFKCVTCENQAPVHFVGVGSC 104

RESULT 14
AAB31666
ID AAB31666 standard; protein; 104 AA.
XX
XX AAB31666;
XX
XX 30-APR-2001 (first entry)
XX
XX Amino acid sequence of a frog ribonuclease protein.
XX
XX Frog; ribonuclease; ranpirnase; RNase.
XX
XX Rana pipiens.
XX
XX Key Location/Qualifiers
XX Modified-site 1
XX
XX US6175003-B1.
XX
XX 16-JAN-2001.
XX
XX 10-SEP-1999; 99US-00394268.
XX
XX 10-SEP-1999; 99US-00394268.
XX
XX (ALFA-) ALFACELL CORP.
XX
XX Saxena SK;
XX
XX WPI; 2001-167808/17.
XX
XX New nucleic acids encoding a ribonuclease (Rnase), useful for the precise
XX targeting of Rnase to a predetermined cell receptor.
XX
XX Claim 1; Col 5-6; 7pp; English.
XX
XX The present sequence represents a frog ribonuclease protein (ranpirnase)
XX (RNase). The specification describes a synthetic ribonuclease protein, in
XX which the addition of cysteine in the ribonuclease facilitates the
XX chemical linking of a targeting molecule by the single reactive
XX sulphydryl group. The specification also describes a method for the
XX production of ranpirnase using DNA technology instead of processing
XX biological material. The re-engineering of the protein molecule allows
XX easier attachment to a targeting molecule thereby making it possible for
XX the ribonuclease to be delivered to a particular cell receptor where it
XX might be most effective
XX
XX Sequence 104 AA;
SQ
  Query Match          93.0%; Score 543; DB 4; Length 104;
  Best Local Similarity 93.3%; Pred. No. 3.2e-59;
  Matches 97; Conservative 3; Mismatches 4; Indels 0; Gaps 0;

QY 2 QDWLTFQKKHLTNRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 61

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Db 1 QDWLTFQKKHINTRDVDCDNLMSNTLFECKDKNTFYSRPEPVKAICKGIIASKNVLTT 60
QY 62 FEFYLSDCNATSRPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 105
Db 61 SEFYLSDCNVTSRPCKYKLLKSTNKFVTCENQAPVHFVGVGSC 104

RESULT 15
ABG32650
ID ABG32650 standard; protein; 104 AA.
XX AC ABG32650;
XX DT 15-NOV-2002 (first entry)
XX DE Northern leopard frog ranpirnase protein.
XX KW Northern leopard frog; ranpirnase; site-directed mutation; ribonuclease.
XX OS Rana pipiens.
XX PN US6423515-B1.
XX PD 23-JUL-2002.
XX PF 14-OCT-2000; 2000US-00687748.
XX PR 10-SEP-1999; 99US-00394268.
XX PA (ALFA-) ALFACELL CORP.
XX PI Saxena SK;
XX DR WPI; 2002-664633/71.
XX PT Constructing isolated nucleic acid encoding ribonuclease, by subjecting
PT desired recombinant plasmid DNA to different site-directed mutations to
PT produce nucleic acid, using different polymerase chain reaction
PT protocols.
XX PS Claim 1; Col 5-6; 8pp; English.
XX CC The present invention relates to a new method of constructing isolated
CC nucleic acid encoding ribonuclease protein with N-terminal Met at
CC position -1 and Glu at position 1, where its Met has been cleaved and its
CC Glu has been autocyclised. The method of the invention involves
CC subjecting pET10d-rOnc(Q1,M23L) plasmid DNA to two different site-
CC directed mutations, each using overlapping PCR protocol. The method is
CC useful for constructing an isolated nucleic acid encoding the
CC ribonuclease. The present amino acid sequence represents the northern
CC leopard frog ranpirnase protein of the invention
XX SQ Sequence 104 AA;
Query Match 93.0%; Score 543; DB 5; Length 104;
Best Local Similarity 93.3%; Pred. No. 3.2e-59;
Matches 97; Conservative 3; Mismatches 4; Indels 0; Gaps 0;
QY 2 QDWLTFQKKHINTRDVDCDNLMSNTLFECKDKNTFYSRPEPVKAICKGIIASKNVLTT 61
Db 1 QDWLTFQKKHINTRDVDCDNLMSNTLFECKDKNTFYSRPEPVKAICKGIIASKNVLTT 60
QY 62 FEFYLSDCNATSRPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 105
Db 61 SEFYLSDCNVTSRPCKYKLLKSTNKFVTCENQAPVHFVGVGSC 104

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OM protein - protein search, using sw model

Run on: May 7, 2004, 21:28:45 ; Search time 12.1796 Seconds
(without alignments)
445.066 Million cell updates/sec

Title: US-09-961-400-8

Perfect score: 584

Sequence: 1 MQDMLTFQKKHLTNRDVC.....TFCVTCENQAPVHFGVGHC 105

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 389414 seqs, 51625971 residues

Total number of hits satisfying chosen parameters: 389414

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database : Issued Patents AA.*
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2: /cgn2_6/ptodata/2/1aa/5B COMB.pep.*
3: /cgn2_6/ptodata/2/1aa/6A COMB.pep.*
4: /cgn2_6/ptodata/2/1aa/6B COMB.pep.*
5: /cgn2_6/ptodata/2/1aa/PCTUS COMB.pep.*
6: /cgn2_6/ptodata/2/1aa/backfiles1.pep.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match %	Length	DB ID	Description
1	545	93.3	104	1	US-08-467-955-2
2	545	93.3	105	3	US-08-875-811-39
3	545	93.3	355	3	US-08-875-811-41
4	545	93.3	358	3	US-08-875-811-51
5	543	93.0	104	3	US-09-394-268-1
6	543	93.0	104	4	US-09-687-748-1
7	543	93.0	104	4	US-08-626-288-1
8	543	93.0	104	4	US-09-095-429-1
9	543	93.0	112	3	US-08-875-811-32
10	543	93.0	129	3	US-08-875-811-63
11	543	93.0	251	3	US-08-875-811-59
12	543	93.0	254	3	US-08-875-811-61
13	543	93.0	355	3	US-08-875-811-49
14	543	93.0	355	3	US-08-875-811-57
15	543	93.0	355	3	US-08-875-811-64
16	543	93.0	366	3	US-08-875-811-55
17	543	93.0	379	3	US-08-875-811-43
18	540	92.5	104	1	US-08-283-971-1
19	540	92.5	104	1	US-07-921-619-1
20	540	92.5	104	1	US-08-467-955-1
21	540	92.5	104	2	US-08-891-848-13
22	540	92.5	104	3	US-09-394-268-2
23	540	92.5	104	4	US-09-687-748-2
24	540	92.5	104	4	US-08-626-288-2
25	540	92.5	104	4	US-09-095-429-2
26	538	92.1	104	3	US-08-875-811-1
27	538	92.1	104	4	US-09-071-672-1

28 538 92.1 104 4 US-09-986-119-1 Sequence 1, Appli
29 538 92.1 105 3 US-08-875-811-26 Sequence 26, Appl
30 538 92.1 106 3 US-08-875-811-28 Sequence 28, Appl
31 538 92.1 107 3 US-08-875-811-30 Sequence 30, Appl
32 537 92.0 105 3 US-08-875-811-24 Sequence 24, Appl
33 534 91.4 358 3 US-08-875-811-45 Sequence 45, Appl
34 534 91.4 365 3 US-08-875-811-53 Sequence 53, Appl
35 515 88.2 107 3 US-08-875-811-20 Sequence 20, Appl
36 482 88.5 360 3 US-08-875-811-47 Sequence 47, Appl
37 470.5 80.6 111 3 US-08-875-811-22 Sequence 22, Appl
38 432 74.0 83 3 US-08-875-811-2 Sequence 2, Appli
39 432 74.0 83 4 US-09-071-672-3 Sequence 3, Appli
40 432 74.0 83 4 US-09-986-119-3 Sequence 3, Appli
41 283 48.5 111 2 US-08-891-848-12 Sequence 12, Appl
42 283 48.5 111 3 US-08-875-811-4 Sequence 8, Appli
43 212.5 36.4 114 3 US-09-223-118-4 Sequence 4, Appli
44 200.5 34.3 114 3 US-09-223-118-2 Sequence 2, Appli
45 199.5 34.2 114 3 US-09-223-118-1 Sequence 1, Appli

ALIGNMENTS

RESULT 1
US-08-467-955-2
; Sequence 2, Application US/08467955
; Patent No. 5728805
; GENERAL INFORMATION:
; APPLICANT: Ardelt Ph.D. Wojciech J.
; TITLE OF INVENTION: PHARMACEUTICALS AND METHOD FOR MAKING THEM
; NUMBER OF SEQUENCES: 2
; CORRESPONDENCE ADDRESS:
; ADDRESSER: Mark H. Jay, P.A.
; STREET: P.O. Box E
; CITY: Short Hills
; STATE: New Jersey
; COUNTRY: USA
; ZIP: 07078-0383
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent In Release #1.24
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/467,955
; FILING DATE:

CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/178,118
FILING DATE: 06-APR-1988
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/436,141
FILING DATE: 13-NOV-1989
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/814,332
FILING DATE: 03-FEB-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/283,970
FILING DATE: 01-AUG-1994
ATTORNEY/AGENT INFORMATION:
NAME: Jay, Mark H.
REGISTRATION NUMBER: 27507
REFERENCE/DOCKET NUMBER: 5007 US
TELECOMMUNICATION INFORMATION:
TELEPHONE: 201-912-9066
TELEFAX: 201-912-0442
TELEX: No. 5728805 Applicable
INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
LENGTH: 104 amino acids
TYPE: amino acid
STRANDEDNESS: single
TOPOLOGY: linear

```
; MOLECULE TYPE: protein
; HYPOTHETICAL: N
; ANTI-SENSE: N
; FRAGMENT TYPE: N-terminal
; ORIGINAL SOURCE:
; ORGANISM: Rana pipiens
; DEVELOPMENTAL STAGE: Oocyte
US-08-467-955-2

Query Match          93.3%; Score 545; DB 1; Length 104;
Best Local Similarity 93.3%; Pred. No. 9.3e-59;
Matches 97; Conservative 3; Mismatches 4; Indels 0; Gaps 0;

QY 2 QDWLTFQKKHLTNRDVCNINLSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 61
Db 1 EDWLTFFQKKHITNRDVCNINLSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 60

QY 62 TFEYLSDCNATSRPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 105
Db 61 SEFYLSDCNVTSRPCKYKLLKSTNFKVCVTCENQAPVHFVGVGRC 104

RESULT 2
US-08-875-811-39
; Sequence 39, Application US/08875811
; Patent No. 6045793
; GENERAL INFORMATION:
; APPLICANT: Rybak, Susanna M.
; APPLICANT: Newton, Dianne L.
; APPLICANT: Boque, Lluís
; APPLICANT: Wlodawer, Alexander
; TITLE OF INVENTION: Recombinant Ribonuclease Proteins
; NUMBER OF SEQUENCES: 64
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Townsend and Townsend and Crew LLP
; STREET: Two Embarcadero Center, Eighth Floor
; CITY: San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94111-3834
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent In Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; FILING DATE: 19-FEB-1998
; CLASSIFICATION: 435
; PRIOR APPLICATION NUMBER: US/08/875,811
; FILING DATE: 19-FEB-1998
; APPLICATION TYPE: WO PCT/US97/02588
; FILING DATE: 19-FEB-1997
; PRIOR APPLICATION NUMBER: US 60/011,800
; FILING DATE: 21-FEB-1996
; ATTORNEY/AGENT INFORMATION:
; NAME: Paris, Susan K.
; REGISTRATION NUMBER: 41,739
; REFERENCE/DOCKET NUMBER: 015280-244100US
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (415) 576-0200
; TELEFAX: (415) 576-0300
; INFORMATION FOR SEQ ID NO: 39:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 105 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: protein
US-08-875-811-39

Query Match          93.3%; Score 545; DB 3; Length 105;
Best Local Similarity 92.4%; Pred. No. 9.5e-59;
Matches 97; Conservative 4; Mismatches 4; Indels 0; Gaps 0;

QY 1 QDWLTFQKKHLTNRDVCNINLSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 60
Db 1 MEDWLTFFQKKHITNRDVCNINLSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 60

QY 61 TFEYLSDCNATSRPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 105
Db 61 TSEFYLSDCNVTSRPCKYKLLKSTNFKVCVTCENQAPVHFVGVGSC 105

RESULT 3
US-08-875-811-41
; Sequence 41, Application US/08875811
; Patent No. 6045793
; GENERAL INFORMATION:
; APPLICANT: Rybak, Susanna M.
; APPLICANT: Newton, Dianne L.
; APPLICANT: Boque, Lluís
; APPLICANT: Wlodawer, Alexander
; TITLE OF INVENTION: Recombinant Ribonuclease Proteins
; NUMBER OF SEQUENCES: 64
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Townsend and Townsend and Crew LLP
; STREET: Two Embarcadero Center, Eighth Floor
; CITY: San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94111-3834
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent In Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; FILING DATE: 19-FEB-1998
; CLASSIFICATION: 435
; PRIOR APPLICATION NUMBER: US/08/875,811
; FILING DATE: 19-FEB-1998
; APPLICATION TYPE: WO PCT/US97/02588
; FILING DATE: 19-FEB-1997
; PRIOR APPLICATION NUMBER: US 60/011,800
; FILING DATE: 21-FEB-1996
; ATTORNEY/AGENT INFORMATION:
; NAME: Paris, Susan K.
; REGISTRATION NUMBER: 41,739
; REFERENCE/DOCKET NUMBER: 015280-244100US
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (415) 576-0200
; TELEFAX: (415) 576-0300
; INFORMATION FOR SEQ ID NO: 41:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 355 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: protein
US-08-875-811-41

Query Match          93.3%; Score 545; DB 3; Length 355;
Best Local Similarity 92.4%; Pred. No. 4.6e-58;
Matches 97; Conservative 4; Mismatches 4; Indels 0; Gaps 0;

QY 1 QDWLTFQKKHLTNRDVCNINLSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 60
Db 251 MEDWLTFFQKKHITNRDVCNINLSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 310

QY 61 TFEYLSDCNATSRPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 105
Db 311 TSEFYLSDCNVTSRPCKYKLLKSTNFKVCVTCENQAPVHFVGVGSC 355

RESULT 4
US-08-875-811-51
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; Sequence 51, Application US/08875811
; Patent No. 6045793
; GENERAL INFORMATION:
; APPLICANT: Rybak, Susanna M.
; APPLICANT: Newton, Dianne L.
; APPLICANT: Boque, Luis
; APPLICANT: Wlodawer, Alexander
; TITLE OF INVENTION: Recombinant Ribonuclease Proteins
; NUMBER OF SEQUENCES: 64
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Townsend and Townsend and Crew LLP
; STREET: Two Embarcadero Center, Eighth Floor
; CITY: San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94111-3834
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/875,811
; FILING DATE: 19-FEB-1998
; CLASSIFICATION: 435
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: WO PCT/US97/02588
; FILING DATE: 19-FEB-1997
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 60/011,800
; FILING DATE: 21-FEB-1996
; ATTORNEY/AGENT INFORMATION:
; NAME: Paris, Susan K.
; REGISTRATION NUMBER: 41,739
; REFERENCE/DOCKET NUMBER: 015280-244100US
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (415) 576-0200
; TELEFAX: (415) 576-0300
; INFORMATION FOR SEQ ID NO: 51:
; LENGTH: 358 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: protein
; US-08-875-811-51

Query Match 93.3%; Score 545; DB 3; Length 358;
Best Local Similarity 92.4%; Pred. No. 4.6e-58;
Matches 97; Conservative 4; Mismatches 4; Indels 0; Gaps 0;

Qy 1 MQDLTFQKKHLTNRDVEDCNILSTNLFHCKDKNTFYSRPEPVKAICKGIIASKNVLT 60
Db 1 MEDWLTFOKKHITNRDVEDCNIMSTNLFHCKDKNTFYSRPEPVKAICKGIIASKNVLT 60

Qy 61 TFEFVLSDCNATSRPCKYKLLKSTNTFCVTENQAPVHFVGVC 105
Db 61 TSEFVLSDCNVTSRPCKYKLLKSTNKFCVTCENQAPVHFVGVC 105

RESULT 5
US-09-394-268-1
; Sequence 1, Application US/09394268
; Patent No. 6175003
; GENERAL INFORMATION:
; APPLICANT: Saxena, Shailendra K
; TITLE OF INVENTION: NUCLEIC ACIDS ENCODING RIBONUCLEASES AND METHODS OF
; MAKING THEM
; FILE REFERENCE: 5013
; CURRENT APPLICATION NUMBER: US/09/394,268
; CURRENT FILING DATE: 1999-09-10
; NUMBER OF SEQ ID NOS: 8
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 1

LENGTH: 104
TYPE: PRT
ORGANISM: Rana pipiens
US-09-394-268-1

Query Match 93.0%; Score 543; DB 3; Length 104;
Best Local Similarity 93.3%; Pred. No. 1.6e-58;
Matches 97; Conservative 3; Mismatches 4; Indels 0; Gaps 0;

Qy 2 QDLTTFQKKHLTNRDVEDCNILSTNLFHCKDKNTFYSRPEPVKAICKGIIASKNVLT 61
Db 1 QDLTTFQKKHITNRDVEDCNIMSTNLFHCKDKNTFYSRPEPVKAICKGIIASKNVLT 60

Qy 62 PEFYLSDCNATSRPCKYKLLKSTNTFCVTENQAPVHFVGVC 105
Db 61 SEFYLSDCNVTSRPCKYKLLKSTNKFCVTCENQAPVHFVGVC 104

RESULT 6
US-09-687-748-1
; Sequence 1, Application US/09687748
; Patent No. 6423515
; GENERAL INFORMATION:
; APPLICANT: Saxena, Shailendra K
; TITLE OF INVENTION: METHODS OF MAKING NUCLEIC ACIDS ENCODING RIBONUCLEASES
; FILE REFERENCE: 5013 US 01
; CURRENT APPLICATION NUMBER: US/09/687,748
; CURRENT FILING DATE: 2000-10-14
; PRIOR APPLICATION NUMBER: 09/394,268
; PRIOR FILING DATE: 1999-09-10
; NUMBER OF SEQ ID NOS: 8
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 1

LENGTH: 104
TYPE: PRT
ORGANISM: Rana pipiens
US-09-687-748-1

Query Match 93.0%; Score 543; DB 4; Length 104;
Best Local Similarity 93.3%; Pred. No. 1.6e-58;
Matches 97; Conservative 3; Mismatches 4; Indels 0; Gaps 0;

Qy 2 QDLTTFQKKHLTNRDVEDCNILSTNLFHCKDKNTFYSRPEPVKAICKGIIASKNVLT 61
Db 1 QDLTTFQKKHITNRDVEDCNIMSTNLFHCKDKNTFYSRPEPVKAICKGIIASKNVLT 60

Qy 62 PEFYLSDCNATSRPCKYKLLKSTNTFCVTENQAPVHFVGVC 105
Db 61 SEFYLSDCNVTSRPCKYKLLKSTNKFCVTCENQAPVHFVGVC 104

RESULT 7
US-08-626-288-1
; Sequence 1, Application US/08626288
; Patent No. 6649392
; GENERAL INFORMATION:
; APPLICANT: Youle, Richard
; APPLICANT: Vasandani, Veena
; APPLICANT: Wu, Yon-Neng
; APPLICANT: Boix, Ester
; APPLICANT: Ardel, Wojciech
; TITLE OF INVENTION: A Mutant Form of Cytotoxic Protein Which
; TITLE OF INVENTION: Allows Production by Recombinant Methods
; NUMBER OF SEQUENCES: 3
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Townsend and Townsend and Crew
; STREET: One Market Plaza, Steuart Street Tower
; CITY: San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94105-1492
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
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COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICANT: PatentIn Release #1.30
FILING DATE: US/08/626,288
CLASSIFICATION: 530
ATTORNEY/AGENT INFORMATION:
NAME: Ran, David B.
REGISTRATION NUMBER: 38,589
REFERENCE/DOCKET NUMBER: 15280-267
TELEPHONE: (415) 543-9600
TELEFAX: (415) 543-5043
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 104 amino acids
TYPE: amino acid
STRANDEDNESS:
TOPOLOGY: linear
MOLECULE TYPE: protein
US-08-626-288-1

Query Match 93.0%; Score 543; DB 4; Length 104;
Best Local Similarity 93.3%; Pred. No. 1.6e-58;
Matches 97; Conservative 3; Mismatches 4; Indels 0; Gaps 0;

QY 2 QDWLTFQKKHINTRDVDCNNILSTNLFHCKDKNTFIYSRPFVKAICKGIIASKNVLT 61
Db 1 QDWLTFQKKHINTRDVDCNNILSTNLFHCKDKNTFIYSRPFVKAICKGIIASKNVLT 60

QY 62 PEFYLSDCNATSRPCKYKLKSKTNTFCVTCENQAPVHFVGVGHC 105
Db 61 SEFYLSDCNVTSPCKYKLKSKTNKFCVTCENQAPVHFVGVGSC 104

RESULT 8
US-09-095-429-1
Sequence 1, Application US/09095429
Patent No. 6649393
GENERAL INFORMATION:
APPLICANT: Youle, Richard
APPLICANT: Vasandani, Veena
APPLICANT: Wu, Yon-Neng
APPLICANT: Boix, Ester
APPLICANT: Ardel, Wojciech
TITLE OF INVENTION: A Mutant Form of Cytotoxic Protein Which
NUMBER OF SEQUENCES: 3
CURRENT APPLICATION DATA:
CORRESPONDENCE ADDRESS:
ADDRESS: Townsend and Townsend and Crew
STREET: One Market Plaza, Stewart Street Tower
CITY: San Francisco
STATE: California
COUNTRY: USA
ZIP: 94105-1492
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/095,429
FILING DATE:
CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/626,288
FILING DATE:
ATTORNEY/AGENT INFORMATION:
NAME: Ran, David B.
REGISTRATION NUMBER: 38,589
REFERENCE/DOCKET NUMBER: 15280-267
TELECOMMUNICATION INFORMATION:

TELEPHONE: (415) 543-9600
TELEFAX: (415) 543-5043
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 104 amino acids
TYPE: amino acid
STRANDEDNESS:
TOPOLOGY: linear
MOLECULE TYPE: protein
US-09-095-429-1

Query Match 93.0%; Score 543; DB 4; Length 104;
Best Local Similarity 93.3%; Pred. No. 1.6e-58;
Matches 97; Conservative 3; Mismatches 4; Indels 0; Gaps 0;

QY 2 QDWLTFQKKHINTRDVDCNNILSTNLFHCKDKNTFIYSRPFVKAICKGIIASKNVLT 61
Db 1 QDWLTFQKKHINTRDVDCNNILSTNLFHCKDKNTFIYSRPFVKAICKGIIASKNVLT 60

QY 62 PEFYLSDCNATSRPCKYKLKSKTNTFCVTCENQAPVHFVGVGHC 105
Db 61 SEFYLSDCNVTSPCKYKLKSKTNKFCVTCENQAPVHFVGVGSC 104

RESULT 9
US-08-875-811-32
Sequence 32, Application US/08875811
Patent No. 6045793
GENERAL INFORMATION:
APPLICANT: Rybak, Susanna M.
APPLICANT: Newton, Dianne L.
APPLICANT: Boque, Lluis
APPLICANT: Wlodawer, Alexander
TITLE OF INVENTION: Recombinant Ribonuclease Proteins
NUMBER OF SEQUENCES: 64
CURRENT APPLICATION DATA:
CORRESPONDENCE ADDRESS:
ADDRESS: Townsend and Townsend and Crew LLP
STREET: Two Embarcadero Center, Eighth Floor
CITY: San Francisco
STATE: California
COUNTRY: USA
ZIP: 94111-3834
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/875,811
FILING DATE: 19-FEB-1998
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: WO PCT/US97/02588
FILING DATE: 19-FEB-1997
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 60/011,800
FILING DATE: 21-FEB-1996
ATTORNEY/AGENT INFORMATION:
NAME: Faris, Susan K.
REGISTRATION NUMBER: 41,739
REFERENCE/DOCKET NUMBER: 015280-244100US
TELECOMMUNICATION INFORMATION:
TELEPHONE: (415) 576-0200
TELEFAX: (415) 576-0300
INFORMATION FOR SEQ ID NO: 32:
SEQUENCE CHARACTERISTICS:
LENGTH: 112 amino acids
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: protein
US-08-875-811-32

Query Match 93.0%; Score 543; DB 3; Length 112;

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Best Local Similarity   92.4%;   Pred. No. 1.8e-58;
Matches    97; Conservative    3; Mismatches    5; Indels    0; Gaps    0;

QY      1  MQDWLTFQKKHLTNTRVDVDCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 60
Db      8  MSDWLTFQKKHTNTRVDVDCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 67

QY     61  TFEFYISDCNATSRPCKYKLIKKSNTFTCVTCENQAPVHFVGVC 105
Db     68  TSFYLSDCNVTSRPCKYKLIKKSNTKFCVTCEQAPVHFVGVC 112

RESULT 10
US-08-875-811-63
; Sequence 63, Application US/08875811
; Patent No. 6045793
; GENERAL INFORMATION:
; APPLICANT: Rybak, Susanna M.
; APPLICANT: Newton, Dianne L.
; APPLICANT: Boque, Iuluis
; APPLICANT: Wlodawer, Alexander
; TITLE OF INVENTION: Recombinant Ribonuclease Proteins
; NUMBER OF SEQUENCES: 64
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Townsend and Townsend and Crew LLP
; STREET: Two Embarcadero Center, Eighth Floor
; CITY: San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94111-3834
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/875,811
; FILING DATE: 19-FEB-1998
; CLASSIFICATION: 435
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: WO PCT/US97/02588
; FILING DATE: 19-FEB-1997
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 60/011,800
; FILING DATE: 21-FEB-1996
; ATTORNEY/AGENT INFORMATION:
; NAME: Paris, Susan K.
; REGISTRATION NUMBER: 41,739
; REFERENCE/DOCKET NUMBER: 015280-244100US
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (415) 576-0200
; TELEFAX: (415) 576-0300
; INFORMATION FOR SEQ ID NO: 63:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 129 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: protein
US-08-875-811-63

Query Match          93.0%;   Score 543;   DB 3; Length 129;
Best Local Similarity 93.3%;   Pred. No. 2.2e-58;
Matches    97; Conservative    3; Mismatches    4; Indels    0; Gaps    0;

QY      2  QDMLTFQKKHLTNTRVDVDCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 61
Db     26  QDMLTFQKKHTNTRVDVDCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 85

QY     62  FEFYLSDCNATSRPCKYKLIKKSNTFTCVTCENQAPVHFVGVC 105
Db     86  SEFYLSDCNVTSRPCKYKLIKKSNTKFCVTCEQAPVHFVGVC 129

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ADDRESSEE: Townsend and Townsend and Crew LLP
STREET: Two Embarcadero Center, Eighth Floor
CITY: San Francisco
STATE: California
COUNTRY: USA
ZIP: 94111-3834
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patent in Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/875,811
FILING DATE: 19-FEB-1998
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: WO PCT/US97/02588
FILING DATE: 19-FEB-1997
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 60/011,800
FILING DATE: 21-FEB-1996
ATTORNEY/AGENT INFORMATION:
NAME: Faris, Susan K.
REGISTRATION NUMBER: 41,739
REFERENCE/DOCKET NUMBER: 015280-244100US
TELEPHONE: (415) 576-0200
TELEFAX: (415) 576-0300
INFORMATION FOR SEQ ID NO: 61:
SEQUENCE CHARACTERISTICS:
LENGTH: 254 amino acids
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: protein
US-08-875-811-49

Query Match 93.0%; Score 543; DB 3; Length 254;
Best Local Similarity 92.4%; Pred. No. 5.2e-58;
Matches 97; Conservative 3; Mismatches 5; Indels 0; Gaps 0;

QY 1 MQDWLTFQKKHLTNRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 60
Db 1 MSDWLTFFQKKHITNTRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 60

QY 61 TFEFYLSDCNATSRPCKYKXKSTNTFCVTCENQAPVHFGVGHG 105
Db 61 TSEFYLSDCNVTSRPOCKYKXKSTNTFCVTCENQAPVHFGVGHG 105

RESULT 13
US-08-875-811-49
Sequence 49, Application US/08875811
Patent No. 6045793
GENERAL INFORMATION:
APPLICANT: Rybak, Susanna M.
APPLICANT: Newton, Dianne L.
APPLICANT: Boque, Lluís
APPLICANT: Wlodawer, Alexander
TITLE OF INVENTION: Recombinant Ribonuclease Proteins
NUMBER OF SEQUENCES: 64
CORRESPONDENCE ADDRESS:
ADDRESSEE: Townsend and Townsend and Crew LLP
STREET: Two Embarcadero Center, Eighth Floor
CITY: San Francisco
STATE: California
COUNTRY: USA
ZIP: 94111-3834
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patent in Release #1.0, Version #1.30
CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/08/875,811
FILING DATE: 19-FEB-1998
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: WO PCT/US97/02588
FILING DATE: 19-FEB-1997
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 60/011,800
FILING DATE: 21-FEB-1996
ATTORNEY/AGENT INFORMATION:
NAME: Faris, Susan K.
REGISTRATION NUMBER: 41,739
REFERENCE/DOCKET NUMBER: 015280-244100US
TELEPHONE: (415) 576-0200
TELEFAX: (415) 576-0300
INFORMATION FOR SEQ ID NO: 49:
SEQUENCE CHARACTERISTICS:
LENGTH: 355 amino acids
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: protein
US-08-875-811-49

Query Match 93.0%; Score 543; DB 3; Length 355;
Best Local Similarity 92.4%; Pred. No. 8e-58;
Matches 97; Conservative 3; Mismatches 5; Indels 0; Gaps 0;

QY 1 MQDWLTFQKKHLTNRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 60
Db 251 MSDWLTFFQKKHITNTRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 310

QY 61 TFEFYLSDCNATSRPCKYKXKSTNTFCVTCENQAPVHFGVGHG 105
Db 311 TSEFYLSDCNVTSRPOCKYKXKSTNTFCVTCENQAPVHFGVGHG 355

RESULT 14
US-08-875-811-57
Sequence 57, Application US/08875811
Patent No. 6045793
GENERAL INFORMATION:
APPLICANT: Rybak, Susanna M.
APPLICANT: Newton, Dianne L.
APPLICANT: Boque, Lluís
APPLICANT: Wlodawer, Alexander
TITLE OF INVENTION: Recombinant Ribonuclease Proteins
NUMBER OF SEQUENCES: 64
CORRESPONDENCE ADDRESS:
ADDRESSEE: Townsend and Townsend and Crew LLP
STREET: Two Embarcadero Center, Eighth Floor
CITY: San Francisco
STATE: California
COUNTRY: USA
ZIP: 94111-3834
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patent in Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/875,811
FILING DATE: 19-FEB-1998
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: WO PCT/US97/02588
FILING DATE: 19-FEB-1997
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 60/011,800
FILING DATE: 21-FEB-1996
ATTORNEY/AGENT INFORMATION:
NAME: Faris, Susan K.
REGISTRATION NUMBER: 41,739

```
; REFERENCE/DOCKET NUMBER: 015280-244100US
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (415) 576-0200
; TELEFAX: (415) 576-0300
; INFORMATION FOR SEQ ID NO: 57:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 355 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: protein
US-08-875-811-57

Query Match          93.0%; Score 543; DB 3; Length 355;
Best Local Similarity 92.4%; Pred. No. 8e-58;
Matches 97; Conservative 3; Mismatches 5; Indels 0; Gaps 0;

QY 1 MODWLTFOKKHLLTNRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 60
Db 1 MSDWLTFOKKHLLTNRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 60
QY 61 TFEFYLSDCNATSRPCKYKLLKSKTNTFCVTENQAPVHFVGVGHC 105
Db 61 TSEFYLSDCNVTSRPCKYKLLKSKTNTFCVTENQAPVHFVGVGSC 105

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Job time : 13.1796 secs

; NAME/KEY: Protein
; LOCATION: 1..355
; OTHER INFORMATION: /note= "E6PB[Met-(-1)]SerrOnc"
US-08-875-811-64

Query Match          93.0%; Score 543; DB 3; Length 355;
Best Local Similarity 92.4%; Pred. No. 8e-58;
Matches 97; Conservative 3; Mismatches 5; Indels 0; Gaps 0;

QY 1 MODWLTFOKKHLLTNRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 60
Db 251 MSDWLTFOKKHLLTNRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 310
QY 61 TFEFYLSDCNATSRPCKYKLLKSKTNTFCVTENQAPVHFVGVGHC 105
Db 311 TSEFYLSDCNVTSRPCKYKLLKSKTNTFCVTENQAPVHFVGVGSC 355

Search completed: May 7, 2004, 21:40:44
Job time : 13.1796 secs

; REFERENCE/DOCKET NUMBER: 015280-244100US
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (415) 576-0200
; TELEFAX: (415) 576-0300
; INFORMATION FOR SEQ ID NO: 57:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 355 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: protein
US-08-875-811-57

Query Match          93.0%; Score 543; DB 3; Length 355;
Best Local Similarity 92.4%; Pred. No. 8e-58;
Matches 97; Conservative 3; Mismatches 5; Indels 0; Gaps 0;

QY 1 MODWLTFOKKHLLTNRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 60
Db 1 MSDWLTFOKKHLLTNRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 60
QY 61 TFEFYLSDCNATSRPCKYKLLKSKTNTFCVTENQAPVHFVGVGHC 105
Db 61 TSEFYLSDCNVTSRPCKYKLLKSKTNTFCVTENQAPVHFVGVGSC 105

RESULT 15
US-08-875-811-64
; Sequence 64, Application US/09875811
; Patent No. 6045793
; GENERAL INFORMATION:
; APPLICANT: Rybak, Susanna M.
; APPLICANT: Newton, Dianne L.
; APPLICANT: Boque, Lluís
; APPLICANT: Wlodawer, Alexander
; TITLE OF INVENTION: Recombinant Ribonuclease Proteins
; NUMBER OF SEQUENCES: 64
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Townsend and Townsend and Crew LLP
; STREET: Two Embarcadero Center, Eighth Floor
; CITY: San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94111-3834
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC Compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/875,811
; FILING DATE: 19-FEB-1998
; CLASSIFICATION: 435
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: WO PCT/US97/02588
; FILING DATE: 19-FEB-1997
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 60/011,800
; FILING DATE: 21-FEB-1996
; ATTORNEY/AGENT INFORMATION:
; NAME: Paris, Susan K.
; REGISTRATION NUMBER: 41,739
; REFERENCE/DOCKET NUMBER: 015280-244100US
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (415) 576-0200
; TELEFAX: (415) 576-0300
; INFORMATION FOR SEQ ID NO: 64:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 355 amino acids
; TYPE: amino acid
; STRANDEDNESS:
; TOPOLOGY: linear
; MOLECULE TYPE: protein
; FEATURE:
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OM protein - protein search, using sw model

Run on: May 7, 2004, 21:29:40 ; Search time 33.6904 Seconds
(without alignments)

865.070 Million cell updates/sec

Title: US-09-961-400-8

Perfect score: 584

Sequence: 1 MQDWLTFFQKKHLTNRDVC.....TFCVTCENQAPVHFVGVC 105

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 1140673 seqs, 277566755 residues

Total number of hits satisfying chosen parameters: 1140673

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

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Published Applications AA:*
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match %	Length	ID	Description
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3	575	98.5	104	10	US-09-961-400-4
4	572	97.9	111	10	US-09-961-400-9
5	571	97.8	105	10	US-09-948-391A-8
6	571	97.8	111	10	US-09-948-391A-9
7	570	97.6	105	10	US-09-948-391A-6
8	570	97.6	105	10	US-09-961-400-6
9	565	96.7	104	10	US-09-961-400-2
10	565	96.7	105	10	US-09-948-391A-13
11	565	96.7	105	10	US-09-961-400-13
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13	565	96.7	127	10	US-09-961-400-28
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17	548	93.8	105	14	US-10-153-882-2
18	538	92.1	104	9	US-09-986-119-1
19	538	92.1	104	10	US-09-918-887-1
20	535	91.6	104	12	US-10-461-713-53
21	432	74.0	83	9	US-09-986-119-3
22	432	74.0	83	10	US-09-918-887-3
23	281.5	48.2	111	10	US-09-948-391A-21
24	281.5	48.2	111	10	US-09-961-400-21
25	281.5	48.2	117	10	US-09-948-391A-22
26	281.5	48.2	117	10	US-09-961-400-22
27	280.5	48.0	111	10	US-09-961-400-17
28	276.5	47.2	110	10	US-09-961-400-19
29	275.5	47.2	110	10	US-09-948-391A-15
30	275.5	47.2	110	10	US-09-961-400-15
31	275.5	47.2	111	10	US-09-948-391A-26
32	275.5	47.2	111	10	US-09-961-400-26
33	274.5	47.0	111	10	US-09-948-391A-17
34	270.5	46.3	110	10	US-09-948-391A-19
35	270.5	46.3	110	10	US-09-948-391A-24
36	270.5	46.3	110	10	US-09-961-400-24
37	154.5	26.5	169	13	US-10-016-447-2
38	142	24.3	119	12	US-10-016-248-89
39	142	24.3	119	15	US-10-074-378A-139
40	123.5	21.1	124	13	US-10-016-447-5
41	117	20.0	124	12	US-10-037-417-103
42	109	18.7	124	9	US-09-981-286A-8
43	109	18.7	124	12	US-10-461-713-50
44	105.5	18.1	119	12	US-10-461-713-57
45	104	17.8	147	9	US-09-286-240-6

ALIGNMENTS

RESULT 1

US-09-961-400-8
; Sequence 8, Application US/09961400
; Publication No. US20030124131A1
; GENERAL INFORMATION:
; APPLICANT: BYAK, SUSANNA M.
; APPLICANT: GOLDENBERG, DAVID M.
; TITLE OF INVENTION: IMMUNOCONJUGATES OF TOXINS DIRECTED AGAINST MALIGNANT
; TITLE OF INVENTION: CELLS
; FILE REFERENCE: 018733/1059
; CURRENT APPLICATION NUMBER: US/09/961,400
; PRIOR FILING DATE: 2001-09-25
; PRIOR APPLICATION NUMBER: 09/622,613
; PRIOR FILING DATE: 2000-08-17
; PRIOR APPLICATION NUMBER: PCT/US99/06641
; PRIOR FILING DATE: 1999-03-26
; PRIOR APPLICATION NUMBER: 60/079,751
; PRIOR FILING DATE: 1998-03-26
; NUMBER OF SEQ ID NOS: 43
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 8
; LENGTH: 105
; TYPE: PRT
; ORGANISM: Rana pipiens
; US-09-961-400-8

Query Match 100.0%; Score 584; DB 10; Length 105;
Best Local Similarity 100.0%; Pred. No. 3.1e-60;
Matches 105; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY	1	MQDWLTFFQKKHLTNRDVCNNILTNLPHCKDKNTFYISRPVPVKAICKGIASKNVLT	60
Db	1	MQDWLTFFQKKHLTNRDVCNNILTNLPHCKDKNTFYISRPVPVKAICKGIASKNVLT	60
QY	61	TFEFYILSDCNATSRPCKYKLEKSTNTFCVTCEQAPVHFVGVC	105
Db	61	TFEFYILSDCNATSRPCKYKLEKSTNTFCVTCEQAPVHFVGVC	105

```
RESULT 2
US-09-948-391A-4
; Sequence 4, Application US/09948391A
; Publication No. US20030027311A1
; GENERAL INFORMATION:
; APPLICANT: Rybak, Susanna M.
; APPLICANT: Newton, Dianne L.
; APPLICANT: The United States of America
; APPLICANT: as represented by The Secretary of the
; APPLICANT: Department of Health and Human Services
; TITLE OF INVENTION: Recombinant Anti-Tumor RNase
; FILE REFERENCE: 015280-343110US
; CURRENT APPLICATION NUMBER: US/09/948,391A
; CURRENT FILING DATE: 2002-05-10
; PRIOR APPLICATION NUMBER: US 60/079,751
; PRIOR FILING DATE: 1998-03-27
; PRIOR APPLICATION NUMBER: WO PCT/US99/06641
; PRIOR FILING DATE: 1999-03-26
; PRIOR APPLICATION NUMBER: US 09/622,613
; PRIOR FILING DATE: 2000-08-17
; NUMBER OF SEQ ID NOS: 43
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 4
; LENGTH: 104
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence:Rana pipiens
; OTHER INFORMATION: ribonuclease with Met23Leu substitution
; OTHER INFORMATION: (recombinant RapLr1 Met23Leu)
US-09-948-391A-4

Query Match          98.5%; Score 575; DB 10; Length 104;
Best Local Similarity 99.0%; Pred. No. 3.5e-59;
Matches 103; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 2 QDWLTFQKKHLNTRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 61
Db 1 QDWLTFQKKHLNTRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 60

QY 62 FEFYSDCNATSRPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 105
Db 61 FEFYSDCNVTSRCPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 104

RESULT 4
US-09-961-400-9
; Sequence 9, Application US/09961400
; Publication No. US20030124131A1
; GENERAL INFORMATION:
; APPLICANT: RYBAK, SUSANNA M.
; APPLICANT: GOLDENBERG, DAVID M.
; APPLICANT: NEWTON, DIANNE L.
; TITLE OF INVENTION: IMMUNOCONJUGATES OF TOXINS DIRECTED AGAINST MALIGNANT
; TITLE OF INVENTION: CELLS
; FILE REFERENCE: 018733/1059
; CURRENT APPLICATION NUMBER: US/09/961,400
; CURRENT FILING DATE: 2001-09-25
; PRIOR APPLICATION NUMBER: 09/622,613
; PRIOR FILING DATE: 2000-08-17
; PRIOR APPLICATION NUMBER: PCT/US99/06641
; PRIOR FILING DATE: 1999-03-26
; PRIOR APPLICATION NUMBER: 60/079,751
; PRIOR FILING DATE: 1998-03-26
; NUMBER OF SEQ ID NOS: 43
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 9
; LENGTH: 111
; TYPE: PRT
; ORGANISM: Rana pipiens
US-09-961-400-9

Query Match          97.9%; Score 572; DB 10; Length 111;
Best Local Similarity 98.1%; Pred. No. 8.4e-59;
Matches 103; Conservative 0; Mismatches 2; Indels 0; Gaps 0;

QY 1 QDWLTFQKKHLNTRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 60
Db 7 QDWLTFQKKHLNTRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 66

QY 61 TFEFYSDCNATSRPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 105
Db 67 TFEFYSDCNVTSRCPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 111

RESULT 5
US-09-948-391A-8
; Sequence 8, Application US/09948391A
; Publication No. US20030027311A1
; GENERAL INFORMATION:
; APPLICANT: Rybak, Susanna M.
; APPLICANT: Newton, Dianne L.
; APPLICANT: The United States of America
; APPLICANT: as represented by The Secretary of the
; APPLICANT: Department of Health and Human Services
; TITLE OF INVENTION: Recombinant Anti-Tumor RNase
; FILE REFERENCE: 015280-343110US
; CURRENT APPLICATION NUMBER: US/09/948,391A
; CURRENT FILING DATE: 2002-05-10
; PRIOR APPLICATION NUMBER: US 60/079,751
; PRIOR FILING DATE: 1998-03-27
; PRIOR APPLICATION NUMBER: WO PCT/US99/06641
; PRIOR FILING DATE: 1999-03-26
; PRIOR APPLICATION NUMBER: US 09/622,613
```

```
; PRIOR FILING DATE: 2000-08-17
; NUMBER OF SEQ ID NOS: 43
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 8
; LENGTH: 105
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence:Rana pipiens
; OTHER INFORMATION: ribonuclease with Met at position 1 and Met24Leu
; OTHER INFORMATION: substitution (recombinant Met(-1) RaPLR1 Met23Leu)
US-09-948-391A-8

Query Match          97.8%; Score 571; DB 10; Length 105;
Best Local Similarity 98.1%; Pred. No. 1.e-58;
Matches 103; Conservative 0; Mismatches 2; Indels 0; Gaps 0;

Qy 1 MODWLTFOKKHLTNTRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 60
Db 1 MODWLTFOKKHLTNTRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 60
Qy 61 TFEFVLSDCNATSRPCKYKLLKSKTNTFCVTCEQAAPVHFVGVGHC 105
Db 61 TFEFVLSDCNVTSRPCKYKLLKSKTNTFCVTCEQAAPVHFVGVGHC 105

RESULT 6
US-09-948-391A-9
; Sequence 9, Application US/09948391A
; Publication No. US20030027311A1
; GENERAL INFORMATION:
; APPLICANT: Rybak, Susanna M.
; APPLICANT: Newton, Dianne L.
; APPLICANT: as represented by The Secretary of the
; APPLICANT: Department of Health and Human Services
; FILE OF INVENTION: Recombinant Anti-Tumor RNase
; TITLE OF INVENTION: 015280-343110US
; CURRENT APPLICATION NUMBER: US/09/948,391A
; CURRENT FILING DATE: 2002-05-10
; PRIOR APPLICATION NUMBER: US 60/079,751
; PRIOR FILING DATE: 1998-03-27
; PRIOR FILING DATE: 1999-03-26
; PRIOR APPLICATION NUMBER: WO PCT/US99/06641
; PRIOR FILING DATE: 2000-08-17
; NUMBER OF SEQ ID NOS: 43
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 9
; LENGTH: 111
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence:Rana pipiens
; OTHER INFORMATION: ribonuclease with (His)6 tag, Met at position 7
; OTHER INFORMATION: and Met30Leu substitution (recombinant Met(-1)
; OTHER INFORMATION: RaPLR1 Met23Leu- (His)6)
US-09-948-391A-9

Query Match          97.8%; Score 571; DB 10; Length 111;
Best Local Similarity 98.1%; Pred. No. 1.e-58;
Matches 103; Conservative 0; Mismatches 2; Indels 0; Gaps 0;

Qy 1 MODWLTFOKKHLTNTRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 60
Db 7 MODWLTFOKKHLTNTRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 66
Qy 61 TFEFVLSDCNATSRPCKYKLLKSKTNTFCVTCEQAAPVHFVGVGHC 105
Db 67 TFEFVLSDCNVTSRPCKYKLLKSKTNTFCVTCEQAAPVHFVGVGHC 111

RESULT 7
```

```
US-09-948-391A-6
; Sequence 6, Application US/09948391A
; Publication No. US20030027311A1
; GENERAL INFORMATION:
; APPLICANT: Rybak, Susanna M.
; APPLICANT: Newton, Dianne L.
; APPLICANT: The United States of America
; APPLICANT: as represented by The Secretary of the
; APPLICANT: Department of Health and Human Services
; TITLE OF INVENTION: Recombinant Anti-Tumor RNase
; FILE REFERENCE: 015280-343110US
; CURRENT APPLICATION NUMBER: US/09/948,391A
; CURRENT FILING DATE: 2002-05-10
; PRIOR APPLICATION NUMBER: US 60/079,751
; PRIOR FILING DATE: 1998-03-27
; PRIOR FILING DATE: 1999-03-26
; PRIOR APPLICATION NUMBER: WO PCT/US99/06641
; PRIOR FILING DATE: 2000-08-17
; NUMBER OF SEQ ID NOS: 43
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 6
; LENGTH: 105
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence:Rana pipiens
; OTHER INFORMATION: ribonuclease with Met at position 1 (recombinant
; OTHER INFORMATION: Met(-1) RaPLR1)
US-09-948-391A-6

Query Match          97.6%; Score 570; DB 10; Length 105;
Best Local Similarity 97.1%; Pred. No. 1.3e-58;
Matches 102; Conservative 1; Mismatches 2; Indels 0; Gaps 0;

Qy 1 MODWLTFOKKHLTNTRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 60
Db 1 MODWLTFOKKHLTNTRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 60
Qy 61 TFEFVLSDCNATSRPCKYKLLKSKTNTFCVTCEQAAPVHFVGVGHC 105
Db 61 TSEFVLSDCNVTISRPKYKLLKSKTNTFCVTCEQAAPVHFVGVGHC 105

RESULT 8
US-09-961-400-6
; Sequence 6, Application US/09961400
; Publication No. US20030124131A1
; GENERAL INFORMATION:
; APPLICANT: Rybak, Susanna M.
; APPLICANT: GOLDENBERG, DAVID M.
; APPLICANT: NEWTON, DIANNE L.
; TITLE OF INVENTION: IMMUNOCONJUGATES OF TOXINS DIRECTED AGAINST MALIGNANT
; TITLE OF INVENTION: CELLS
; FILE REFERENCE: 018733/1059
; CURRENT APPLICATION NUMBER: US/09/961,400
; CURRENT FILING DATE: 2001-09-25
; PRIOR APPLICATION NUMBER: 09/622,613
; PRIOR FILING DATE: 2000-08-17
; PRIOR APPLICATION NUMBER: PCT/US99/06641
; PRIOR FILING DATE: 1999-03-26
; PRIOR APPLICATION NUMBER: 60/079,751
; PRIOR FILING DATE: 1998-03-26
; NUMBER OF SEQ ID NOS: 43
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 6
; LENGTH: 105
; TYPE: PRT
; ORGANISM: Rana pipiens
US-09-961-400-6

Query Match          97.6%; Score 570; DB 10; Length 105;
Best Local Similarity 97.1%; Pred. No. 1.3e-58;
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```

; TITLE OF INVENTION: Recombinant Anti-Tumor RNase
; FILE REFERENCE: 015280-343110US
; CURRENT APPLICATION NUMBER: US/09/948,391A
; CURRENT FILING DATE: 2002-05-10
; PRIOR APPLICATION NUMBER: US 60/079,751
; PRIOR FILING DATE: 1998-03-27
; PRIOR APPLICATION NUMBER: WO PCT/US99/06641
; PRIOR FILING DATE: 1999-03-26
; PRIOR APPLICATION NUMBER: US 09/622,613
; PRIOR FILING DATE: 2000-08-17
; NUMBER OF SEQ ID NOS: 43
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 28
; LENGTH: 127
; TYPE: PRT
; ORGANISM: Rana pipiens
; FEATURE:
; OTHER INFORMATION: Rana pipiens ribonuclease (RaPLR1) Clone 5alb cDNA
; OTHER INFORMATION: Insert
US-09-948-391A-28

Query Match          96.7%; Score 565; DB 10; Length 127;
Best Local Similarity 97.1%; Pred. No. 6.4e-58;
Matches 101; Conservative 1; Mismatches 2; Indels 0; Gaps 0;

QY 2 QDWLTFQKKHLNTRDVCNNILSNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 61
Db 24 QDWLTFQKKHLNTRDVCNNIMSNLHFCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 83

QY 62 FEYLSDCNATSRPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 105
Db 84 SEFYLSDCNVTSRPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 127

RESULT 13
US-09-961-400-28
; Sequence 28, Application US/09961400
; Publication No. US20030124131A1
; GENERAL INFORMATION:
; APPLICANT: RYBAK, SUSANNA M.
; APPLICANT: GOLDENBERG, DAVID M.
; APPLICANT: NEWTON, DIANNE L.
; TITLE OF INVENTION: IMMUNOCONJUGATES OF TOXINS DIRECTED AGAINST MALIGNANT
; TITLE OF INVENTION: CELLS
; FILE REFERENCE: 018733/1059
; CURRENT APPLICATION NUMBER: US/09/961,400
; CURRENT FILING DATE: 2001-09-25
; PRIOR APPLICATION NUMBER: 09/622,613
; PRIOR FILING DATE: 2000-08-17
; PRIOR APPLICATION NUMBER: PCT/US99/06641
; PRIOR FILING DATE: 1999-03-26
; PRIOR APPLICATION NUMBER: 60/079,751
; PRIOR FILING DATE: 1998-03-26
; NUMBER OF SEQ ID NOS: 43
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 28
; LENGTH: 127
; TYPE: PRT
; ORGANISM: Rana pipiens
US-09-961-400-28

Query Match          96.7%; Score 565; DB 10; Length 127;
Best Local Similarity 97.1%; Pred. No. 6.4e-58;
Matches 101; Conservative 1; Mismatches 2; Indels 0; Gaps 0;

QY 2 QDWLTFQKKHLNTRDVCNNILSNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 61
Db 24 QDWLTFQKKHLNTRDVCNNIMSNLHFCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 83

QY 62 FEYLSDCNATSRPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 105
Db 84 SEFYLSDCNVTSRPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 127

RESULT 14
US-09-948-391A-11
; Sequence 11, Application US/09948391A
; Publication No. US20030027311A1
; GENERAL INFORMATION:
; APPLICANT: RYBAK, SUSANNA M.
; APPLICANT: NEWTON, DIANNE L.
; APPLICANT: The United States of America
; APPLICANT: as represented by The Secretary of the
; APPLICANT: Department of Health and Human Services
; TITLE OF INVENTION: Recombinant Anti-Tumor RNase
; FILE REFERENCE: 015280-343110US
; CURRENT APPLICATION NUMBER: US/09/948,391A
; CURRENT FILING DATE: 2002-05-10
; PRIOR APPLICATION NUMBER: US 60/079,751
; PRIOR FILING DATE: 1998-03-27
; PRIOR APPLICATION NUMBER: WO PCT/US99/06641
; PRIOR FILING DATE: 1999-03-26
; PRIOR APPLICATION NUMBER: US 09/622,613
; PRIOR FILING DATE: 2000-08-17
; NUMBER OF SEQ ID NOS: 43
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 11
; LENGTH: 104
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence: Rana pipiens
; OTHER INFORMATION: ribonuclease with Gln1ser substitution
; OTHER INFORMATION: (recombinant RaPLR1 Q1S)
US-09-948-391A-11

Query Match          95.9%; Score 560; DB 10; Length 104;
Best Local Similarity 97.1%; Pred. No. 1.9e-57;
Matches 100; Conservative 1; Mismatches 2; Indels 0; Gaps 0;

QY 3 DWLTFQKKHLNTRDVCNNILSNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 62
Db 2 DWLTFQKKHLNTRDVCNNIMSNLHFCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 61

QY 63 EFYLSDCNATSRPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 105
Db 62 EFYLSDCNVTSRPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 104

RESULT 15
US-09-961-400-11
; Sequence 11, Application US/09961400
; Publication No. US20030124131A1
; GENERAL INFORMATION:
; APPLICANT: RYBAK, SUSANNA M.
; APPLICANT: GOLDENBERG, DAVID M.
; APPLICANT: NEWTON, DIANNE L.
; TITLE OF INVENTION: IMMUNOCONJUGATES OF TOXINS DIRECTED AGAINST MALIGNANT
; TITLE OF INVENTION: CELLS
; FILE REFERENCE: 018733/1059
; CURRENT APPLICATION NUMBER: US/09/961,400
; CURRENT FILING DATE: 2001-09-25
; PRIOR APPLICATION NUMBER: 09/622,613
; PRIOR FILING DATE: 2000-08-17
; PRIOR APPLICATION NUMBER: PCT/US99/06641
; PRIOR FILING DATE: 1999-03-26
; PRIOR APPLICATION NUMBER: 60/079,751
; PRIOR FILING DATE: 1998-03-26
; NUMBER OF SEQ ID NOS: 43
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 11
; LENGTH: 104
; TYPE: PRT
; ORGANISM: Rana pipiens
US-09-961-400-11
```

Query Match 95.9%; Score 560; DB 10; Length 104;
Best Local Similarity 97.1%; Pred. No. 1.9e-57;
Matches 100; Conservative 1; Mismatches 2; Indels 0; Gaps 0;
QY 3 DWLTFQKKHLTNTRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLTTF 62
Db 2 DWLTFQKKHLTNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLTTTS 61
QY 63 EFYLSDCNATSRPCKYKLLKXSTNTFCVTENQAPVHFVGVGHC 105
Db 62 EFYLSDCNVTSRPCKYKLLKXSTNTFCVTENQAPVHFVGVGHC 104

Search completed: May 7, 2004, 21:51:56
Job time : 33.6904 secs

C;Function:
A;Description: hydrolyzes tRNA; induces vascularization of normal and malignant tissues
C;Superfamily: pancreatic ribonuclease
C;Keywords: angiogenesis; hydrolase; nucleic acid degradation
F;60-68/Region: receptor binding #status predicted
F;14,41,115/Active site: His, Lys, His #status predicted
F;27-82,40-93,58-108/Disulfide bonds: #status experimental

Query Match 21.1%; Score 123; DB 1; Length 125;
Best Local Similarity 32.7%; Pred. No. 2,5e-05;
Matches 32; Conservative 14; Mismatches 32; Indels 20; Gaps 5;

QY 17 DVDNNILSTNLF--HCKDKNTFIYSRPEPVKAICK-----GIIASKNVLTTFEY 65
DB 24 DEYCFNMKNRLTPCKDRNTFIHGKNKDIKAI CEDRNGQPYRGDLRIKSKS-----EFQ 78

QY 56 LSDC---NATSR-PCYKYLKSTNTFCVTCENQAPVHF 99
DB 79 ITICKHKGSSRPPCRIGATEDSRVIVVGCENGLPVHF 116

RESULT 7
NRUI
pancreatic ribonuclease (EC 3.1.27.5) - cuis
N;Alternate names: RNase A
C;Species: Galea musteloides (cuis)
C;Date: 03-Aug-1984 #sequence_revision 03-Aug-1984 #text_change 04-Oct-1996
C;Accession: A00827
R;Beintema, J.J.; Neuteboom, B.
J. Mol. Evol. 19, 145-152, 1983
A;Title: Origin of the duplicated ribonuclease gene in guinea-pig: comparison of the ami
A;Reference number: A92957; MUID:87036770; PMID:6571219
A;Accession: A00827
A;Molecule type: protein
A;Residues: 1-124 <BEI>
A;Note: about one-third of the molecules lacked Ala-1
C;Comment: The cuis is a rodent belonging to the same subfamily as the guinea pig.
C;Superfamily: pancreatic ribonuclease
C;Keywords: glycoprotein; hydrolase; nucleic acid digestion; pancreas
F;12,41,119/Active site: His, Lys, His #status predicted
F;26-84,40-95,58-110,65-72/Disulfide bonds: #status predicted
F;94/Binding site: carbonylate (Asn) (covalent) #status absent

Query Match 20.4%; Score 119; DB 1; Length 124;
Best Local Similarity 27.4%; Pred. No. 6.3e-05;
Matches 32; Conservative 21; Mismatches 40; Indels 24; Gaps 7;

QY 5 LTFQKKHL-----TNRDVCNNIL---STNLFCKDKNTFIYSRPEPVKAIC--KGI 52
DB 6 MKFORQHMDSGHPDNTN--YCNEVMVRRSMTQGRCKPVNTFVHEPLEAVQAVCSQKNV 63

QY 53 IASKNVLTTFEY----LSDCNATSRP---CKYLLKSTNTFCVTCEN--QAPVHF 99
DB 64 PCKNGQTCYQSHSSMRITDCRVTSKYPNCYSRWTOAKSIIVACEGDPVPVPHF 120

RESULT 8
NRWHK
pancreatic ribonuclease (EC 3.1.27.5) - minke whale
N;Alternate names: RNase 1; RNase A
C;Species: Balaeoptera acutorostrata (minke whale, lesser rorqual)
C;Date: 24-Apr-1984 #sequence_revision 24-Apr-1984 #text_change 03-Jun-1994
C;Accession: A00818
R;Emmens, M.; Welling, G.W.; Beintema, J.J.
Biochem. J. 157, 317-323, 1976
A;Title: The amino acid sequence of pike whale (lesser rorqual) pancreatic ribonuclease.
A;Reference number: A00818; MUID:76277855; PMID:962870
A;Accession: A00818
A;Molecule type: protein
A;Residues: 1-124 <EMM>
C;Superfamily: pancreatic ribonuclease
C;Keywords: glycoprotein; hydrolase; nucleic acid digestion; pancreas
F;12,41,119/Active site: His, Lys, His #status predicted

F;26-84,40-95,58-110,65-72/Disulfide bonds: #status predicted
F;76/Binding site: carbohydrate (Asn) (covalent) (partial) #status experimental

Query Match 20.0%; Score 117; DB 1; Length 124;
Best Local Similarity 26.9%; Pred. No. 0.0001;
Matches 32; Conservative 16; Mismatches 43; Indels 28; Gaps 6;

QY 5 LTFQKKHLTNRDVC-----CNNILSTNLF---HCKDKNTFIYSRPEPVKAICKGIIASK 56
DB 6 MKFORQHMDSGNSPNNPNYCNQMRRKMTQGRCKPVNTFVHESLESDVKAVC-----SQK 61

QY 57 NVL-----TTFEYLSDCNATSRP-----CKYLLKSTNTFCVTCENQ--APVHF 99
DB 62 NVLCKNGRTNYESNSTMHIITDCRTGSSKYPNCAYKTSQEKHIIIVACEGDPVPVPHF 120

RESULT 9
NRGPB
pancreatic ribonuclease (EC 3.1.27.5) B - guinea pig (tentative sequence)
N;Alternate names: RNase IB
C;Species: Cavia porcellus (guinea pig)
C;Date: 24-Apr-1984 #sequence_revision 24-Apr-1984 #text_change 31-Mar-2000
C;Accession: A00826
R;van den Berg, A.; van den Hende-Timmer, L.; Hofsteenge, J.; Gastra, W.; Beintema, J.J.
Eur. J. Biochem. 75, 91-100, 1977
A;Title: Guinea pig pancreatic ribonucleases. Isolation, properties, primary structure a
A;Reference number: A91247; MUID:77185023; PMID:862624
A;Accession: A00826
A;Molecule type: protein
A;Residues: 1-128 <VAN>
A;Note: 64-Pro was also found
C;Superfamily: pancreatic ribonuclease
C;Keywords: glycoprotein; hydrolase; nucleic acid digestion; pancreas
F;12,41,119/Active site: His, Lys, His #status predicted
F;21,34/Binding site: carbohydrate (Asn) (covalent) #status experimental
F;26-84,40-95,58-110,65-72/Disulfide bonds: #status predicted

Query Match 19.5%; Score 114; DB 1; Length 128;
Best Local Similarity 25.0%; Pred. No. 0.00021;
Matches 29; Conservative 25; Mismatches 40; Indels 22; Gaps 7;

QY 5 LTFQKKHL-----TNRDVCNNIL---STNLFCKDKNTFIYSRPEPVKAIC--KGI 53
DB 6 MKFORQHMDSGSPNSNY--CNVMIRRMNTQGRCKPVNTFVHESLADVQAVCFQKNVL 64

QY 54 ASKNVLTTFEY----LSDCNATSRP---CKYLLKSTNTFCVTCENQ--APVHF 99
DB 65 CKNGQTCYQSYSMRITDCRVTSKYPNCYSRWTOAKSIIVACEGDPVPVPHF 120

RESULT 10
A35932
angiogenin precursor - mouse
N;Alternate names: angiogenesis factor
N;Contains: ribonuclease (EC 3.1.27.-)
C;Species: Mus musculus (house mouse)
C;Date: 09-Nov-1990 #sequence_revision 09-Nov-1990 #text_change 18-Jun-1999
C;Accession: A35932
R;Bond, M.D.; Vallee, B.L.
Biochem. Biophys. Res. Commun. 171, 988-995, 1990
A;Title: Isolation and sequencing of mouse angiogenin DNA.
A;Reference number: A35932; MUID:91025023; PMID:2222458
A;Accession: A35932
A;Status: not compared with conceptual translation
A;Molecule type: DNA
A;Residues: 1-145 <BOX>
A;Cross-references: GB:U22516; NID:g726325; PIDN:AAA91366.1; PID:g726326
C;Genetics:
A;Introns: #status absent
C;Function:
A;Description: hydrolyzes tRNA; induces vascularization of normal and malignant tissues
C;Superfamily: pancreatic ribonuclease
C;Keywords: angiogenesis; hydrolase; nucleic acid degradation; pyroglutamic acid

Query Match 19.0%; Score 111; DB 1; Length 125;
Best Local Similarity 29.9%; Pred. No. 0.00041;

```

RESULT 14
NR506
pancreatic ribonuclease (BC 3.1.27.5) - American bison (tentative sequence)
N;Alternate names: RNase 1; RNase A
C;Species: Bison bison (American bison)
C;Date: 31-Dec-1991 #sequence revision 31-Dec-1991 #text_change 08-Dec-1994
C;Accession: A91771; A90270; A94696; A00804

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Query Match      18.7%; Score 109; DB 1; Length 128;
Best Local Similarity 28.2%; Pred. No. 0.00066;
Matches 33; Conservative 18; Mismatches 38; Indels 28; Gaps 7;

Qy 7 FQKHL-----TNRDVCNNIL-STNLF--HCXDKNTFYSRPEPKVAICGIIASKNV 58
|||::: |||::: |||::: |||::: |||::: |||::: |||::: |||::: |||:::
Db 8 FQRIHDSGSPSTPNPYCNAMKSRNMTQERCKPVNTFVHEPLADVQAVC----FQKNV 63

Qy 59 -----LTTTFVYLSDCNATSR-----PCKYKLKSNFTTFCVTCENQ--APVHF 99
: |||::: |||::: |||::: |||::: |||::: |||::: |||::: |||:::
Db 64 PKNGQSCNVESTNMIHTCDRLTSNKGFPDCLYRTSOEKSIIIVACEGNVPVPVHF 120

```


GenCore version 5.1.6
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OM protein - protein search, using sw model

Run on: May 7, 2004, 21:30:40 ; Search time 5.30402 Seconds
(without alignments)
1030.796 Million cell updates/sec

Title: US-09-961-400-8
Perfect score: 584
Sequence: 1 MODWLTFQKHLTNRDVC.....TFCVTCENQAPVHFVGVGHC 105

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 141681 seqs, 52070155 residues

Total number of hits satisfying chosen parameters: 141681

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : SwissProt_42.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	543	93.0	104	1 RN30_RANPI	P22069 rana pipien
2	286	49.0	133	1 RNPO_RANCA	P11916 rana catesb
3	283.5	48.5	111	1 LECS_RANJA	P18839 rana japoni
4	259.5	44.4	111	1 RNPL_RANCA	P14626 rana catesb
5	142	24.3	119	1 RNP_IGUIG	P80287 iguana igua
6	125.5	21.5	145	1 ANGE_MOUSE	Q64438 mus musculu
7	123.5	21.1	146	1 ANGE_CERAE	Q8wn66 cercopithec
8	123	21.1	148	1 ANGI_BOVIN	P10152 bos taurus
9	119	20.4	124	1 RNP_GALMU	P00680 galea muste
10	117	20.0	124	1 RNP_BALAC	P00673 balaenopter
11	114.5	19.6	146	1 ANGI_MACMU	Q8wn63 macaca mula
12	114	19.5	128	1 RNBP_CAVPO	P00679 cavia porce
13	113.5	19.4	145	1 ANGI_MOUSE	P21570 mus musculu
14	113	19.3	128	1 RNP_MYOCO	P00676 myocastor c
15	112.5	19.3	146	1 ANGI_PAPHA	Q8wn64 papio hamad
16	111.5	19.1	147	1 RNS4_PANTR	Q8hzq0 pan troglod
17	111	19.0	125	1 ANGI_RABIT	P31347 corytolagus
18	109.5	18.8	147	1 RNS4_HUMAN	P34059 homo sapien
19	109	18.7	128	1 RNP_PROGU	P04059 proechinys
20	109	18.7	146	1 ANGI_MIOTA	Q8wn65 miopithecus
21	109	18.7	150	1 RNP_BOVIN	P00656 bos taurus
22	108.5	18.6	155	1 ECP4_MOUSE	Q35291 mus musculu
23	107.5	18.4	123	1 ANGI_PIG	P31346 sus scrofa
24	106	18.2	123	1 ANGI_BOVIN	P80929 bos taurus
25	106	18.2	124	1 RNP_AEPME	P07847 aepyceros m
26	106	18.2	124	1 RNP_ANTAM	P00668 antilocapra
27	106	18.2	124	1 RNP_CHIBR	P00675 chinchilla
28	106	18.2	124	1 RNP_HIPAM	P00672 hippopotamu
29	106	18.2	124	1 RNP_SHEEP	P00661 ovis aries
30	106	18.2	128	1 RNP_HYDHY	P00677 hydrochoeru
31	105	18.0	124	1 RNP_BUBBU	P00657 bubalus bub
32	105	18.0	124	1 RNP_CONTA	P00660 connochaete
33	105	18.0	124	1 RNP_GAZTH	P07848 gazella tho

34	105	18.0	146	1 ANGI_SAGOE	Q8wn62 sequinus oe
35	104	17.8	124	1 RNP_GIRCA	P00662 giraffa cam
36	104	17.8	124	1 RNP_PIG	P00671 sus scrofa
37	104	17.8	146	1 ANGI_SAISC	Q8wn60 saimiri sci
38	104	17.8	147	1 ANGI_HUMAN	P03950 homo sapien
39	104	17.8	147	1 ANGI_PANTR	Q8wn68 pan troglod
40	104	17.8	167	1 RNBR_BOVIN	P39873 bos taurus
41	103.5	17.7	119	1 RNS4_BOVIN	Q35290 mus musculu
42	103	17.6	156	1 ECP3_MOUSE	Q9wus1 myoxus glis
43	103	17.6	156	1 RNP_MYOGL	Q46529 saimiri sci
44	102.5	17.6	150	1 RNS4_SAISC	Q29542 giraffa cam
45	102	17.5	141	1 RNBR_GIRCA	

ALIGNMENTS

RESULT 1
RN30_RANPI
ID RN30_RANPI STANDARD; PRT; 104 AA.
AC P22069;
DT 01-AUG-1991 (Rel. 19, Created)
DT 01-FEB-1994 (Rel. 28, Last sequence update)
DT 28-FEB-2003 (Rel. 41, Last annotation update)
DE P-30 protein (EC 3.1.1.27.-) (Onconase).
OS Rana pipiens (Northern leopard frog).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Amphibia; Batrachia; Anura; Neobatrachia; Ranoidea; Ranidae; Rana.
OX NCBI_TaxID=8404;
RN [1]
RP SEQUENCE.
RC TISSUE=Embryo;
RX MEDLINE=91093131; PubMed=1985896;
RA Ardelt W., Mikulski S.M., Shogen K.;
RT "Amino acid sequence of an anti-tumor protein from Rana pipiens
oocytes and early embryos. Homology to pancreatic ribonucleases.";
RL J. Biol. Chem. 266:245-251 (1991).
RN [2]
RP 3D-STRUCTURE MODELING.
RX MEDLINE=93066156; PubMed=1438177;
RA Mosimann S.C., Johns K.L., Ardelt W., Mikulski S.M., Shogen K.,
James M.N.G.;
RT "Comparative molecular modeling and crystallization of P-30 protein:
a novel antitumor protein of Rana pipiens oocytes and early
embryos.";
RL Proteins 14:392-400 (1992).
RN [3]
RP X-RAY CRYSTALLOGRAPHY (1.7 ANGSTROMS).
RX MEDLINE=94166079; PubMed=8120892;
RA Mosimann S.C., Ardelt W., James M.N.G.;
RT "Refined 1.7 A X-ray crystallographic structure of P-30 protein, an
amphibian ribonuclease with anti-tumor activity.";
RL J. Mol. Biol. 236:1141-1153 (1994).
CC -!- FUNCTION: Basic protein with antiproliferative/cytotoxic activity
against several tumor cell lines in vitro, as well as antitumor
in vivo. It exhibits a ribonuclease-like activity against high
molecular weight ribosomal RNA.
CC -!- DEVELOPMENTAL STAGE: Early embryos (up to four blastomere stage).
CC -!- SIMILARITY: Belongs to the pancreatic ribonuclease family.
DR PDB; LONC; 31-JAN-94.
DR InterPro; IPR001427; RNaseA.
DR Pfam; PF00074; rnaaseA; 1.
DR ProDom; PD000535; RNaseA; 1.
DR SMART; SM00092; RNase_Pc; 1.
DR PROSITE; PS00127; RNASE_PANCREATIC; 1.
KW Hydrolase; Nuclease; Endonuclease; 3D-structure;
KW Pyrrrolidone carboxylic acid.
FT MOD_RES 1 1 PYRROLIDONE CARBOXYLIC ACID.
FT ACT_SITE 10 10
FT ACT_SITE 31 31
FT ACT_SITE 97 97
FT DISULFID 19 68
FT DISULFID 30 75

```
FT DISULFID 48 90
FT FT DISULFID 87 104
FT HELIX 3 10
FT STRAND 11 12
FT HELIX 19 22
FT TURN 23 24
FT TURN 26 30
FT STRAND 33 38
FT STRAND 41 45
FT HELIX 46 48
FT TURN 49 50
FT STRAND 55 58
FT STRAND 63 70
FT TURN 74 75
FT STRAND 77 84
FT STRAND 86 91
FT TURN 92 93
FT STRAND 94 101
SQ SEQUENCE 104 AA; 11845 MW; 22A753C2F9E566B4 CRC64;

Query Match 93.0%; Score 543; DB 1; Length 104;
Best Local Similarity 93.3%; Pred. No. 1.4e-51;
Matches 97; Conservative 3; Mismatches 4; Indels 0; Gaps 0;

QY 2 QDWLTQKHLNTRDVCNINLSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 61
DB 1 QDWLTQKHLNTRDVCNINLSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 60

QY 62 FEYVSDCNATSPCKYKLLKSNITFCVTCENQAPVHFVGVGHC 105
DB 61 SEFYVSDCNATSPCKYKLLKSNITFCVTCENQAPVHFVGVGSC 104

RESULT 2
ID RNPO RANCA STANDARD; PRT; 133 AA.
AC P11516; Q9PWR7;
DT 01-OCT-1989 (Rel. 12, Created)
DT 10-OCT-2003 (Rel. 42, Last sequence update)
DE 10-OCT-2003 (Rel. 42, Last annotation update)
DE Ribonuclease, oocytes precursor (EC 3.1.27.-) (RC-RNase) (Sialic acid-
DE binding lectin) (SBL-C).
GN RCR.
OS Rana catesbeiana (Bull frog).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Amphibia; Batrachia; Anura; Neobatrachia; Ranioidea; Ranidae; Rana.
OX NCBI_TaxID=8400;
RN [1]_TaxID=8400;
RP SEQUENCE FROM N.A.
RC TISSUE=Liver;
RX MEDLINE=98165825; PubMed=94937370;
RA Huang H.C., Wang S.C., Leu Y.J., Lu S.C., Liao Y.D.;
RT "The Rana catesbeiana rcr gene encoding a cytotoxic ribonuclease.
RT Tissue distribution, cloning, purification, cytotoxicity, and active
RT residues for RNase activity.";
RL J. Biol. Chem. 273:6395-6401(1998).
RN [2]
RP SEQUENCE OF 23-133.
RC TISSUE=Egg;
RX MEDLINE=87299649; PubMed=3304421;
RA Titani K., Takio K., Kuwada M., Nitta K., Sakakibara F., Kawauchi H.,
RA Takayanagi G., Hakomori S.;
RT "Amino acid sequence of sialic acid binding lectin from frog (Rana
RT catesbeiana) eggs.";
RL Biochemistry 26:2189-2194(1987).
RN [3]
RP CHARACTERIZATION, AND SEQUENCE OF 81-101.
RX MEDLINE=92220613; PubMed=1373237;
RA Liao Y.-D.;
RT "A pyrimidine-guanine sequence-specific ribonuclease from Rana
RT catesbeiana (bullfrog) oocytes.";
RL Nucleic Acids Res. 20:1371-1377(1992).
RN [4]

CHARACTERIZATION.
TISSUE=Egg;
MEDLINE=93192604; PubMed=8448385;
Nitta K., Oyama F., Oyama R., Sekiguchi K., Kawauchi H.,
Takayanagi Y., Hakomori S., Titani K.;
"Ribonuclease activity of sialic acid-binding lectin from Rana
catesbeiana eggs.";
Glycobiology 3:37-45(1993).
RN [5]
RN STRUCTURE BY NMR OF 23-133.
RX MEDLINE=98437383; PubMed=9761686;
Chang C.-F., Chen C., Chen Y.-C., Hom K., Huang R.-F., Huang T.H.;
"The solution structure of a cytotoxic ribonuclease from the oocytes
of Rana catesbeiana (bullfrog).";
J. Mol. Biol. 283:231-244(1998).
RL -!- FUNCTION: Preferentially cleaves single-stranded RNA at pyrimidine
residues with a 3'flanking guanine. Hydrolyzes poly(U) and poly(C)
as substrates, and prefers the former. The S-lectins in frog eggs
may be involved in the fertilization and the formation of frog
embryo. This lectin agglutinates various animal cells, including
normal lymphocytes, erythrocytes, and fibroblasts of animal and
human origin. It is cytotoxic against several tumor cells.
CC -!- SUBUNIT: Monomer.
CC -!- SUBCELLULAR LOCATION: Secreted.
CC -!- SIMILARITY: Belongs to the pancreatic ribonuclease family.
CC
CC This SWISS-PROT entry is copyright. It is produced through a collaboration
between the Swiss Institute of Bioinformatics and the EMBL Outstation -
the European Bioinformatics Institute. There are no restrictions on its
use by non-profit institutions as long as its content is in no way
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entities requires a license agreement (See http://www.isb-sib.ch/announce/
or send an email to license@isb-sib.ch)
CC
CC EMBL; AF039104; AAD10702.1; --
CC PIR; A27121; A27121.
CC PDB; 1BC4; 28-OCT-98.
CC PDB; 1M07; 21-JAN-03.
CC InterPro; IPR001427; RNaseA.
CC Pfam; PF00074; RNaseA; 1.
CC ProDom; PD000535; RNaseA; 1.
CC SMART; SM00092; RNaseA; 1.
CC PROSITE; PS00127; RNASE_PANCREATIC; 1.
CC Hydrolase; Nuclease; Endonuclease; Sialic acid; Lectin; 3D-structure;
KW Signal; Pyrrolidone carboxylic acid.
FT SIGNAL 1 22
FT CHAIN 23 133 RIBONUCLEASE, OOCYTES.
FT MOD RES 23 23 PYRROLIDONE CARBOXYLIC ACID.
FT ACT_SITE 32 32
FT ACT_SITE 57 57
FT ACT_SITE 125 125
FT DISULFID 41 93
FT DISULFID 56 103
FT DISULFID 74 118
FT DISULFID 115 132
FT HELIX 25 32
FT HELIX 41 45
FT TURN 48 49
FT STRAND 59 63
FT HELIX 67 73
FT TURN 74 74
FT STRAND 79 84
FT STRAND 90 95
FT STRAND 105 110
FT STRAND 114 119
FT TURN 120 121
FT STRAND 122 129
SQ SEQUENCE 133 AA; 14762 MW; A7D62594F7D16F0C CRC64;

Query Match 49.0%; Score 286; DB 1; Length 133;
Best Local Similarity 49.5%; Pred. No. 6.9e-24;
Matches 55; Conservative 14; Mismatches 34; Indels 8; Gaps 3;
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QY 2 QDWLTFFQKHLNTRDVCNNILSTNLF----HCKDKNTFYISRPVPVKAICKGIASKN 57
    |||:||||:||||:||||:||||:||||:||||:||||:||||:||||:||||:
DB 23 QNWATFQKHLNTRDVCNNILSTNLF----HCKDKNTFYISRPVPVKAICKGIASKN 81
    |||:||||:||||:||||:||||:||||:||||:||||:||||:||||:||||:
QY 58 VLTTFEYVLSDCNATS---RCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 105
    |||:||||:||||:||||:||||:||||:||||:||||:||||:||||:||||:
DB 82 VLTSTTRFQNLNTRDVCNNILSTNLF----HCKDKNTFYISRPVPVKAICKGIASKN 132
    |||:||||:||||:||||:||||:||||:||||:||||:||||:||||:||||:

RESULT 3
LECS_RANJA STANDARD; PRT; 111 AA.
AC P18839;
DT 01-NOV-1990 (Rel. 16, Created)
DT 01-FEB-1994 (Rel. 28, Last sequence update)
DT 10-OCT-2003 (Rel. 42, Last annotation update)
DE Sialic acid-binding lectin (EC 3.1.27.-).
OS Rana japonica (Japanese reddish frog).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Amphibia; Batrachia; Anura; Neobatrachia; Ranoidea; Ranidae; Rana.
OX NCBI_TaxID=8402;
RN [1]
RP SEQUENCE, AND DISULFIDE BONDS.
RC TISSUE=Egg;
RX MEDLINE=91035319; PubMed=2229005;
RA Kamiya Y., Oyama F., Oyama R., Sakakibara F., Nitta K., Kawauchi H.,
RA Takayanagi Y., Titani K.;
RT "Amino acid sequence of a lectin from Japanese frog (Rana japonica)
RT eggs.";
RL J. Biochem. 108:139-143(1990).
CC -!- FUNCTION: The S-lectins in frog eggs may be involved in the
CC fertilization and development of the frog embryo. This lectin
CC preferentially agglutinate a large variety of tumor cells, but it
CC does not agglutinate non-transformed cells and erythrocytes.
CC -!- SUBUNIT: Monomer.
CC -!- SUBCELLULAR LOCATION: Secreted.
CC -!- SIMILARITY: Belongs to the pancreatic ribonuclease family.
DR PIR: JX0120; JX0120.
DR HSSP; P11916; 1BC4.
DR InterPro; IPR001427; RNaseA.
DR Pfam; PF00074; RNaseA; 1.
DR ProDom; PD000535; RNaseA; 1.
DR SMART; SM00092; RNase PC; 1.
DR PROSITE; PS00127; RNASE PANCREATIC; 1.
KW Hydrolase; Nuclease; Endonuclease; Sialic acid; Lectin;
KW Pyrrolidone carboxylic acid.
FT MOD_RES 1 1 PYRROLIDONE CARBOXYLIC ACID.
FT ACT_SITE 10 10 BY SIMILARITY.
FT ACT_SITE 35 35 BY SIMILARITY.
FT ACT_SITE 104 104 BY SIMILARITY.
FT DISULFID 19 72 BY SIMILARITY.
FT DISULFID 34 82 BY SIMILARITY.
FT DISULFID 52 97 BY SIMILARITY.
FT DISULFID 94 111 PROBABLE.
SQ SEQUENCE 111 AA; 12326 MW; FDEBDF3834ED679 CRC64;

Query Match 48.5%; Score 283.5; DB 1; Length 111;
Best Local Similarity 45.3%; Pred. No. 1.1e-23;
Matches 51; Conservative 21; Mismatches 32; Indels 7; Gaps 3;

QY 2 QDWLTFFQKHLNTRDVCNNILSTNLF----HCKDKNTFYISRPVPVKAICKGIASKN 57
    |||:||||:||||:||||:||||:||||:||||:||||:||||:||||:||||:
DB 1 QNWAKFQKHLNTRDVCNNILSTNLF----HCKDKNTFYISRPVPVKAICKGIASKN 60
    |||:||||:||||:||||:||||:||||:||||:||||:||||:||||:||||:
QY 58 VLTTFEYVLSDC--NATS-RPKYKLLKSTNTFCVTCENQAPVHFVGVGHC 105
    |||:||||:||||:||||:||||:||||:||||:||||:||||:||||:||||:
DB 61 VLTSTTRFQNLNTRDVCNNILSTNLF----HCKDKNTFYISRPVPVKAICKGIASKN 111
    |||:||||:||||:||||:||||:||||:||||:||||:||||:||||:||||:

RESULT 4
RNPL_RANCA STANDARD; PRT; 111 AA.
ID RNPL_RANCA
AC P14626;

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DT 01-APR-1990 (Rel. 14, Created)
DT 01-FEB-1994 (Rel. 28, Last sequence update)
DT 28-FEB-2003 (Rel. 41, Last annotation update)
DE Ribonuclease, liver (EC 3.1.27.5).
OS Rana catesbeiana (Bull frog).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Amphibia; Batrachia; Anura; Neobatrachia; Ranoidea; Ranidae; Rana.
OX NCBI_TaxID=8400;
RN [1]
RP SEQUENCE.
RC TISSUE=Liver;
RX MEDLINE=90130374; PubMed=2613682;
RA Nitta K., Katayama N., Okabe Y., Iwama M., Watanabe H., Abe Y.,
RA Okazaki T., Ohgi K., Irie M.;
RT "Primary structure of a ribonuclease from bullfrog (Rana catesbeiana)
RT liver.";
RL J. Biochem. 106:729-735(1989).
CC -!- CATALYTIC ACTIVITY: Endonucleolytic cleavage to nucleoside 3'-
CC phosphates and 3'-phosphooligonucleotides ending in C-P or U-P
CC with 2',3'-cyclic phosphate intermediates.
CC -!- SUBCELLULAR LOCATION: Secreted.
CC -!- SIMILARITY: Belongs to the pancreatic ribonuclease family.
DR PIR: JX0085; JX0085.
DR HSSP; P11916; 1BC4.
DR InterPro; IPR001427; RNaseA.
DR Pfam; PF00074; RNaseA; 1.
DR ProDom; PD000535; RNaseA; 1.
DR SMART; SM00092; RNase PC; 1.
DR PROSITE; PS00127; RNASE PANCREATIC; 1.
KW Hydrolase; Nuclease; Endonuclease; Pyrrolidone carboxylic acid.
FT MOD_RES 1 1 PYRROLIDONE CARBOXYLIC ACID.
FT ACT_SITE 10 10 BY SIMILARITY.
FT ACT_SITE 35 35 BY SIMILARITY.
FT ACT_SITE 104 104 BY SIMILARITY.
FT DISULFID 19 72 BY SIMILARITY.
FT DISULFID 34 82 BY SIMILARITY.
FT DISULFID 52 97 BY SIMILARITY.
FT DISULFID 94 111 PROBABLE.
SQ SEQUENCE 111 AA; 12461 MW; D64BAV72456C10788 CRC64;

Query Match 44.4%; Score 259.5; DB 1; Length 111;
Best Local Similarity 42.3%; Pred. No. 4e-21;
Matches 47; Conservative 18; Mismatches 39; Indels 7; Gaps 2;

QY 2 QDWLTFFQKHLNTRDVCNNILSTNLF----HCKDKNTFYISRPVPVKAICKGIASKN 57
    |||:||||:||||:||||:||||:||||:||||:||||:||||:||||:||||:
DB 1 QNWAKFQKHLNTRDVCNNILSTNLF----HCKDKNTFYISRPVPVKAICKGIASKN 60
    |||:||||:||||:||||:||||:||||:||||:||||:||||:||||:||||:
QY 58 VLTTFEYVLSDC---NATSRPKYKLLKSTNTFCVTCENQAPVHFVGVGHC 105
    |||:||||:||||:||||:||||:||||:||||:||||:||||:||||:||||:
DB 61 ELSTTSTFQNLNTRDVCNNILSTNLF----HCKDKNTFYISRPVPVKAICKGIASKN 111
    |||:||||:||||:||||:||||:||||:||||:||||:||||:||||:||||:

RESULT 5
RNP_IGUITG STANDARD; PRT; 119 AA.
AC P80287;
DT 01-FEB-1994 (Rel. 28, Created)
DT 01-FEB-1994 (Rel. 28, Last sequence update)
DT 28-FEB-2003 (Rel. 41, Last annotation update)
DE Ribonuclease pancreatic (EC 3.1.27.5) (RNase 1) (RNase A).
OS Iguana iguana (Common iguana).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Lepidosauria; Squamata; Iguania; Iguanidae; Iguaninae; Iguana.
OX NCBI_TaxID=8517;
RN [1]
RP SEQUENCE.
RC TISSUE=Pancreas;
RX MEDLINE=94139745; PubMed=8307028;
RA Zhao W., Beintema J.J., Hofsteenge J.;
RT "The amino acid sequence of iguana (Iguana iguana) pancreatic
RT ribonuclease.";
RL Eur. J. Biochem. 219:641-646(1994).

```

CC -! CATALYTIC ACTIVITY: Endonucleolytic cleavage to nucleoside 3'-
CC phosphates and 3'-phosphooligonucleotides ending in C-P or U-P
CC with 2',3'-cyclic phosphate intermediates.
CC -! SUBCELLULAR LOCATION: Secreted.
CC -! TISSUE SPECIFICITY: Secreted.
CC -! SIMILARITY: Belongs to the pancreatic ribonuclease family.

DR	FLK; S41111; S41111.
DR	HSP; P00656; 1LSQ.
DR	InterPro; IPR001427; RNaseA.
DR	Pfam; PF00074; rnaseA; 1.
DR	PRINTS; PR00794; RIBONUCLEASE.
DR	ProDom; PD000535; RNaseA; 1.
DR	SMART; SM00092; RNase Pc; 1.
DR	PROSITE; PS00127; RNASE PANCREATIC; 1.
KW	Hydrolase; Nuclease; Endonuclease; Pyroglutamate; 1.
FT	MOD_RES 1
FT	DISULFID 25 80
FT	DISULFID 39 91
FT	DISULFID 57 106
FT	ACT_SITE 10 10
FT	ACT_SITE 40 40
FT	ACT_SITE 113 113
SQ	SEQUENCE 119 AA; 13324 MW; 6072P85B7B15BD5A CFC64.

```

Query March 24.3%; Score 142; DB 1; Length 119;
Best Local Similarity 29.8%; Pred. No. 1.8e-08;
Matches 34; Conservative 19; Mismatches 45; Indels 16; Gaps 5;

Qy 2 QDWLTFQKKH-----TNRDVCNNIL-----STNLFCKDKDNTFYSRPVPKAC--K 50
      ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||
Db 1 CDWSFQNKHIDYPTETSAASNYACDLMQRRNLNPTKCTRTYFVASPSEIQQVCGSG 60

```

Qy	51	GIIASKNVLTTFE-FYLSDC----	NATSPCKYKLLKSTNTFCVTCENQAPVHF	99
		: : : :	: : : :	
Db	61	GTHVEDNLDSNESFDLTDKNVGTFAPSSCKYNGTPTGTRIRACENNQPVHF		114

RESULT 6	
ANGR MOUSE	
ID ANGR MOUSE	STANDARD; PRT; 145 AA.
AC Q64438;	
DT 01-NOV-1997 (Rel. 35, Created)	
DT 01-NOV-1997 (Rel. 35, Last sequence update)	
DT 28-FEB-2003 (Rel. 41, last annotation update)	
DE Angiogenin-related protein precursor.	
GN ANGRP.	
OS Mus musculus (Mouse).	
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;	
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.	
OX NCBI_TaxID=10090;	

[1]
SEQUENCE FROM N.A.
RC STRAIN=129; TISSUE=Liver;
RX MEDLINE=96079109; PubMed=8530072;
RA Brown W.E., Nobile V., Subramanian V., Shapiro R.;
RT "The mouse angicogenin gene family: structures of an angio-genin-related
RL protein gene and two pseudogenes.";
RI Genomics 29:200-206 (1995).
CC -1- SIMILARITY: Belongs to the pancreatic ribonuclease family.

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CC
DR EMBL; U22519; AAA91367.1; -.
DR HSSP; P03950; 1A4Y.
DR MGD; MGI:104984; Angrip.
DR InterPro; IPR001427; RNaseA.
DR Pfam; PF000074; rNaseA; 1.

DR	PRINTS; PR00794; RIBONUCLEASE.
DR	ProDom; PD000535; RNaseA; 1.
DR	SMART; SM00092; RNASE PG; 1.
DR	PROSITE; PS00127; RNASE_PANCREATIC; 1.
KW	Signal; Hydrolase; Nuclease; Endonuclease;
KW	Pyrrolidone carboxylic acid.
FT	SIGNAL 1 24
FT	CHAIN 25 145
FT	MOD_RES 25 25
FT	POTENTIAL.
FT	ANGIOGENIN-RELATED PROTEIN.
FT	PYRROLIDONE CARBOXYLIC ACID (BY SIMILARITY).
FT	ACT_SITE 37 37 BY SIMILARITY.
FT	ACT_SITE 64 64 BY SIMILARITY.
FT	ACT_SITE 137 137 BY SIMILARITY.
FT	DISULFID 50 104 BY SIMILARITY.
FT	DISULFID 63 115 BY SIMILARITY.
FT	DISULFID 81 130 BY SIMILARITY.
SQ	SEQUENCE 145 AA; 16612 MW; 29A6EB814429C4AD CRC64;
 Query Match 21.5%; Score 125.5; DB 1; Length 145; Best Local Similarity 36.8%; Pred. No. 1.3e-06; Matches 28; Conservative 11; Mismatches 30; Indels 7; Gaps 3;	
OY	31 CKDKNTRYISRPPEPVKAIC--KGLIAKNV-LTTFEFLSDCNATSR-----PKYKKLKS 83 : :: :: :: ::
Dd	63 CKDYNTFIHTDKNNAIKACGKGSGPYGNRLRIASKSRPQVTCTHKGSSPPPCRYASKG 122 : :: :: :: ::
OY	84 TINFVCVTCNOAPVHF 99 :
Dd	123 FRYIIIGCGWPVHF 138 :

RESULT 7	
ANGI_CERAE	
ID	ANGI_CERAE
STANDARD;	PRT; 146 AA.
AC	O8WN66;
DT	28-FEB-2003 (Rel. 41, Created)
DT	28-FEB-2003 (Rel. 41, Last sequence update)
DT	28-FEB-2003 (Rel. 41, Last annotation update)
DE	Angiogenin precursor (EC 3.1.27.-) (Ribonuclease 5) (RNase 5) .
GN	ANG OR RNASE5.
OS	Cercopithecus aethiops (Green monkey) (Grivet).
OC	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC	Mammalia; Eutheria; Primates; Catarrhini; Cercopithecidae;
OC	Cercopithecinae; Cercopithecus.
OX	NCBI_TaxID=9534;
RN	[1]

```

SEQUENCE FROM N.A.
MEDLINE-21918422; PubMed-11919285;
Zhang J., Rosenberg H.F.;
"Diversifying selection of the tumor-growth promoter angiogenin in
RT primate evolution.";
Mol. Biol. Evol. 19:438-445(2002) .
CC -I- FUNCTION: May function as a tRNA-specific ribonuclease that binds
CC to actin on the surface of endothelial cells; once bound,
CC angioenagin is endocytosed and translocated to the nucleus, thereby
CC promoting the endothelial invasiveness necessary for blood vessel
CC formation. Angioenagin induces vascularization of normal and
CC malignant tissues. Abolishes protein synthesis by specifically
CC hydrolyzing cellular tRNAs (By similarity) .
CC -I- SUBCELLULAR LOCATION: Secreted.
CC -I- SIMILARITY: Belongs to the pancreatic ribonuclease family.
CC
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CC or send an email to license@isb-sib.ch).
CC
CC EMBL; AF4411664; RAL61646.1; --
CC InterPro; IPR001427; RNaseA.
CC Pfam; PF00074; rnaaseA; 1.

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DR PRINTS; PR00794; RIBONUCLEASE.
DR ProDom; PD000535; RNaseA; 1.
DR SMART; SM00092; RNaseA; 1.
DR PROSITE; PS00127; RNASE_PANCREATIC; 1.
KW Hydrolase; Nuclease; Endonuclease; Angiogenesis;
KW Protein synthesis inhibitor; Signal; Pyrrolidone carboxylic acid.
FT SIGNAL 1 24
FT CHAIN 25 146
FT MOD_RES 25 25
FT ANGIOGENIN.
FT PYRROLIDONE CARBOXYLIC ACID (BY
FT SIMILARITY).
FT ACT SITE 37 37
FT ACT SITE 64 64
FT ACT SITE 138 138
FT DISULFID 50 105
FT DISULFID 63 116
FT DISULFID 81 131
FT DISULFID 146 AA; 16444 MW; 27860112858BDF9 CRC64;
SQ
Query Match 21.1%; Score 123.5; DB 1; Length 146;
Best Local Similarity 29.7%; Pred. No. 2.1e-06;
Matches 30; Conservative 17; Mismatches 31; Indels 23; Gaps 4;
Qy 6 TFQKKHLTNRDVCNNILTNLHCKDKNTFIYSRPPVKAIC---KGIASKNV-LTT 61
Db 53 TMRRLHTSP-----CKDINTFIHGKHHKAIKAGDNGNPGYENLRISK 97
Qy 62 FEEVLSDCN---ATSRPCKYKLLKSTNTFCVTCENQAPVH 98
Db 98 SPFQVTTNLRGGSPRPPCQVTRATGRSNIVVGCENGLPVH 138
RESULT 8
ANGI_BOVIN
ID ANGI_BOVIN STANDARD; PRT; 148 AA.
AC F10152; Q9GK9P;
DT 01-MAR-1989 (Rel. 10, Created)
DT 28-FEB-2003 (Rel. 41, Last sequence update)
DT 15-MAR-2004 (Rel. 43, Last annotation update)
DE Angiogenin-1 precursor (EC 3.1.27.-).
GN ANGI OR ANG.
OS Bos taurus (Bovine).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
OC Bovidae; Bovinae; Bos.
OC NCBI_TaxID=9913;
RN [1]_TaxID=9913;
RP SEQUENCE FROM N.A.
RC TISSUE=Liver;
RA Chang S.-I.;
RT "Cloning, sequencing, and expression of bovine angiogenin.";
RL Submitted (MAR-1999) to the EMBL/GenBank/DBJ databases.
RN [2]
RP SEQUENCE OF 24-148.
RC TISSUE=Milk;
RX MEDLINE=89065101; PubMed=3197838;
RA Maes P., Damart D., Rommens C., Montreuil J., Spik G., Tartar A.;
RT "The complete amino acid sequence of bovine milk angiogenin.";
RL FEBS Lett. 241:41-45 (1988).
RN [3]
RP SEQUENCE OF 24-148.
RC TISSUE=Plasma;
RX MEDLINE=89375344; PubMed=2775757;
RA Bond M.D., Strydom D.J.;
RT "Amino acid sequence of bovine angiogenin.";
RL Biochemistry 28:6110-6113 (1989).
RN [4]
RP CHARACTERIZATION, AND SEQUENCE OF 25-55.
RC TISSUE=Plasma;
RX MEDLINE=89118214; PubMed=3064806;
RA Bond M.D., Vallee B.L.;
RT "Isolation of bovine angiogenin using a placental ribonuclease
inhibitor binding assay.";
RL Biochemistry 27:6282-6287 (1988).
RN [5]
RX X-RAY CRYSTALLOGRAPHY (1.5 ANGSTROMS).
RX MEDLINE=95224057; PubMed=7708754;
RA Acharya K.R., Shapiro R., Riordan J.F., Vallee B.L.;
RT "Crystal structure of bovine angiogenin at 1.5-A resolution.";
RL Proc. Natl. Acad. Sci. U.S.A. 92:2949-2953 (1995).
RN [6]
RX STRUCTURE BY NMR.
RX MEDLINE=96280645; PubMed=8688423;
RA Lequin O., Albaret C., Bontems F., Spik G., Lallemand J.-Y.;
RT "Solution structure of bovine angiogenin by 1H nuclear magnetic
resonance spectroscopy.";
RL Biochemistry 35:8870-8880 (1996).
CC -!- FUNCTION: May function as a tRNA-specific ribonuclease that binds
to actin on the surface of endothelial cells; once bound,
angiogenin is endocytosed and translocated to the nucleus, thereby
promoting the endothelial invasiveness necessary for blood vessel
formation. Angiogenin induces vascularization of normal and
malignant tissues. Abolishes protein synthesis by specifically
hydrolyzing cellular tRNAs. Binds tightly to placental
ribonuclease inhibitor and has very low ribonuclease activity.
CC -!- SUBCELLULAR LOCATION: Secreted.
CC -!- TISSUE SPECIFICITY: Serum and milk.
CC -!- SIMILARITY: Belongs to the pancreatic ribonuclease family.
CC
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or send an email to license@isb-sib.ch).
CC
DR EMBL; AF135124; AAG47631.1; -.
DR PDB; 1AGI; 03-APR-96.
DR PDB; 1GIO; 07-DEC-96.
DR InterPro; IPR001427; RNaseA.
DR Pfam; PF00074; RNaseA; 1.
DR PRINTS; PR00794; RIBONUCLEASE.
DR ProDom; PD000535; RNaseA; 1.
DR SMART; SM00092; RNaseA; 1.
DR PROSITE; PS00127; RNASE_PANCREATIC; 1.
KW Hydrolase; Nuclease; Endonuclease; Angiogenesis;
KW Protein synthesis inhibitor; Signal; 3D-structure.
FT SIGNAL 1 23
FT CHAIN 24 148
FT ACT_SITE 37 37
FT ACT_SITE 64 64
FT ACT_SITE 138 138
FT DISULFID 50 105
FT DISULFID 63 116
FT DISULFID 81 131
FT DISULFID 81 131
SQ SEQUENCE 148 AA; 16969 MW; E7999124CBB523DD CRC64;
Query Match 21.1%; Score 123; DB 1; Length 148;
Best Local Similarity 32.7%; Pred. No. 2.5e-06;
Matches 32; Conservative 14; Mismatches 32; Indels 20; Gaps 5;
Qy 17 DVDCKNLTSTNLF--HCKDKNTFIYSRPPVKAICK-----GIIASKNVLTFFFY 65
Db 47 DEYCFNMKNRRLTRPCDKRNTFIHGKNDIKAIKCEDRNGQPYRGDLRISK-----EFQ 101
Qy 66 LSDC---NATSR-PCKYKLLKSTNTFCVTCENQAPVHF 99
Db 102 IITCKHKGSSRPPCRYGATEDSRVIVGCEGLPVHF 139
RESULT 9
RNP_GALMU
ID -RNP_GALMU STANDARD; PRT; 124 AA.
AC P00580;
DT 21-JUL-1986 (Rel. 01, Created)
DT 21-JUL-1986 (Rel. 01, Last sequence update)

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EMBL: AF441667; AAL61649.1; --
InterPro: IPR001427; RNaseA.
Pfam: PF00074; RNaseA.1.
PRINTS; PR00794; RIBONUCLEASE.
ProDom; PD000535; RNaseA; 1.
SMART; SM00092; RNase_Pc; 1.
PROSITE; PS00127; RNASE PANCREATIC; 1.
Hydrolase; Nuclease; Endonuclease; Angiogenesis;
Protein synthesis inhibitor; Signal; Pyrrolidone carboxylic acid.
FT SIGNAL 1 24
FT CHAIN 25 146
FT MOD_RES 25 25
FT ACT_SITE 37 37
FT ACT_SITE 64 64
FT ACT_SITE 138 138
FT DISULFID 50 105
FT DISULFID 63 116
FT DISULFID 81 131
FT SEQUENCE 146 AA; E39A89215DB2A2A4 CRC64;

Query Match 19.6%; Score 114.5; DB 1; Length 146;
Best Local Similarity 27.7%; Pred. No. 2e-05;
Matches 28; Conservative 17; Mismatches 33; Indels 23; Gaps 4;

Qy 6 TFQKKHLTNTDVCNNILSTNLFHCKDKNTFYSRPEPVKAIC---KGIIASKNV-LTT 61
Db 53 TMRARHLTSP-----CKDINTFVGNRHHTAICDENGSPYGNLRIST 97
Qy 62 FEFLYLSDC---NATSRPKYKLLKSTNTFCVTCENQAPVH 98
Db 98 SPFQVTTCKLGGSPRFPQYRATGRSRNIVVGCENGLPVH 138

RESULT 12
RNBP CAVPO STANDARD; PRT; 128 AA.
AC P00679;
DT 21-JUL-1986 (Rel. 01, Created)
DT 21-JUL-1986 (Rel. 01, Last sequence update)
DT 28-FEB-2003 (Rel. 41, Last annotation update)
DE Ribonuclease pancreatic B (EC 3.1.27.5) (RNase IB).
OS Cavia porcellus (Guinea pig).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Hystriognathi; Caviidae; Cavia.
OX NCBI_TaxID=10141;
RN [1]
RP SEQUENCE.
RC TISSUE=Pancreas;
RX MEDLINE=77185023; PubMed=862624;
RA van den Berg A., van den Hende-Timmer L., Hofsteenge J., Gaastra W.,
RA Beintema J.J.;
RT "Guinea-pig pancreatic ribonucleases. Isolation, properties, primary
RT structure and glycosylation.";
RL Eur. J. Biochem. 75:91-100(1977).
CC -1- CATALYTIC ACTIVITY: Endonucleolytic cleavage to nucleoside 3'-
CC phosphates and 3'-phosphooligonucleotides ending in C-P or U-P
CC with 2',3'-cyclic phosphate intermediates.
CC -1- SUBCELLULAR LOCATION: Secreted.
CC -1- TISSUE SPECIFICITY: Pancreas.
CC -1- SIMILARITY: Belongs to the pancreatic ribonuclease family.
DR PIR; A00826; NSGPB.
DR HSP; P00656; ISRN.
DR InterPro; IPR001427; RNaseA.
DR Pfam; PF00074; rnaseA; 1.
DR PRINTS; PR00794; RIBONUCLEASE.
DR ProDom; PD000535; RNaseA; 1.
DR SMART; SM00092; RNase_Pc; 1.

DR PROSITE; PS00127; RNASE PANCREATIC; 1.
KW Hydrolase; Nuclease; Endonuclease; Glycoprotein.
FT DISULFID 26 84
FT DISULFID 40 95
FT DISULFID 58 110
FT DISULFID 65 72
FT ACT_SITE 12 12
FT ACT_SITE 41 41
FT ACT_SITE 119 119
FT CARBOHYD 21 21
FT CARBOHYD 34 34
FT VARIANT 64 64
FT SEQUENCE 128 AA; A2F4101A1A33B93B CRC64;

Query Match 19.5%; Score 114; DB 1; Length 128;
Best Local Similarity 25.0%; Pred. No. 1.9e-05;
Matches 29; Conservative 25; Mismatches 40; Indels 22; Gaps 7;

Qy 5 LTFQKKHL-----TNRDVCNNIL---STNLFHCKDKNTFYSRPEPVKAIC--KGII 53
Db 6 MKFQKHMDPEGSPSNSNY--CNVMIRNMTQGRCKPVTTFVHESLADVQAVCFQKNVL 64
Qy 54 ASKNVLTTFEY----LSDCNATSRP---CKYKLLKSTNTFCVTCENQ--APVHF 99
Db 65 CKNGQTNCYOSYSRMRITDCRVTSSTKFPNCSYRMSQAQSIIVACEGDPVVPVHF 120

RESULT 13
ANGI_MOUSE STANDARD; PRT; 145 AA.
ID ANGI_MOUSE
AC P21570;
DT 01-MAY-1991 (Rel. 18, Created)
DT 01-MAY-1991 (Rel. 18, Last sequence update)
DT 15-MAR-2004 (Rel. 43, Last annotation update)
DE Angiogenin precursor (EC 3.1.27.-) (Ribonuclease 5) (RNase 5).
GN ANG.
OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX NCBI_TaxID=10090;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=91025023; PubMed=2222458;
RA Bond M.D., Vallee B.L.;
RT "Isolation and sequencing of mouse angiogenin DNA.";
RL Biochem. Biophys. Res. Commun. 171:988-995(1990).
RN [2]
RP SEQUENCE FROM N.A.
RC STRAIN=FVB/N; TISSUE=Liver;
RX MEDLINE=22388257; PubMed=12477932;
RA Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G., Schuler G.D.,
RA Klausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schaefer C.F., Bhat N.K.,
RA Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Hsieh F.,
RA Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hong L.,
RA Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
RA Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,
RA Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,
RA Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullaly S.J.,
RA Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,
RA Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
RA Villalón D.K., Munz D.M., Sodergren E.J., Lu X., Gibbs R.A.,
RA Fahey J., Helton E., Kettman M., Madan A., Rodrigues S., Sanchez A.,
RA Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,
RA Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,
RA Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M.,
RA Butterfield Y.S.N., Krzywinski M.I., Skalska U., Smailus D.E.,
RA Schnerch A., Schein J.E., Jones S.J.M., Marra M.A.;
RT "Generation and initial analysis of more than 15,000 full-length
RT human and mouse cDNA sequences.";
RL Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).
RN [3]
RP PARTIAL SEQUENCE.
RC TISSUE=Serum;

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RX MEDLINE=93192291; PubMed=8448182;
RA Bond M.D., Strydom D.J., Vallee B.L.;
RT "Characterization and sequencing of rabbit, pig and mouse
RT angiotensins: discernment of functionally important residues and
RT regions.";
RL Biochim. Biophys. Acta 1162:177-186(1993).
CC -!- FUNCTION: May function as a tRNA-specific ribonuclease that binds
CC to actin on the surface of endothelial cells; once bound,
CC angiotensin is endocytosed and translocated to the nucleus, thereby
CC promoting the endothelial invasiveness necessary for blood vessel
CC formation. Angiotensin induces vascularization of normal and
CC malignant tissues. Abolishes protein synthesis by specifically
CC hydrolyzing cellular tRNAs.
CC -!- SUBCELLULAR LOCATION: Secreted.
CC -!- SIMILARITY: Belongs to the pancreatic ribonuclease family.
CC
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CC
CC EMBL; U22516; AAA91366.1; -.
DR EMBL; BC055355; AAH5355.1; -.
DR PIR; A35932; A35932.
DR HSSP; P03950; 1A4Y.
DR MGD; MGI:88022; Ang.
DR InterPro; IPR001427; RNaseA.
DR Pfam; PF00074; rnaseA; 1.
DR PRINTS; PR00794; RIBONUCLEASE.
DR ProDom; PD000535; RNaseA; 1.
DR SMART; SM00092; RNase P; 1.
DR PROSITE; PS00127; RNASE PANCREATIC; 1.
KW Hydrolase; Nuclease; Endonuclease; Angiogenesis;
KW Protein synthesis inhibitor; Signal; Pyrolicone carboxylic acid.
FT SIGNAL 1 24
FT CHAIN 25 145
FT MOD_RES 25 25
FT
FT PYRROLIDONE CARBOXYLIC ACID (BY
FT SIMILARITY).
FT ACT SITE 37 37
FT ACT SITE 64 64
FT ACT SITE 137 137
FT DISULFID 50 104
FT DISULFID 63 115
FT DISULFID 81 130
FT SEQUENCE 145 AA; 16228 MW; 06944260BB764938 CRC64;
Query Match 19.4%; Score 113.5; DB 1; Length 145;
Best Local Similarity 34.2%; Pred. No. 2.5e-05;
Matches 26; Conservative 11; Mismatches 32; Indels 7; Gaps 3;
Qy 31 CKDKNTIYSPPEVKAIC--KGIIASKNV-LTTFEVLSDCNATS-----RPCKYKIKKS 83
Db |||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:
63 CKDVTHTHGKSNKIKACGANGSPYRENLRWCSPPQVITTKHTGSPRPPCQYRASAG 122
Qy 84 TNPFCVTCENQAPVHF 99
Db :|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:
123 FRHVIACENGLPVHF 138
RESULT 14
RNP_MYOCO
ID_RNP_MYOCO STANDARD; PRT; 128 AA.
AC P00676;
DT 21-JUL-1986 (Rel. 01, Created)
DT 21-JUL-1986 (Rel. 01, Last sequence update)
DT 28-FEB-2003 (Rel. 41, Last annotation update)
DE Ribonuclease pancreatic (EC 3.1.27.5) (RNase 1) (RNase A).
GN RNASE1 OR RNS1.
OS Myocastor coypus (Coypu) (Nutria).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

```

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OC Mammalia; Eutheria; Rodentia; Hystricognathi; Myocastoridae;
OC Myocastor.
OX NCBI_TaxID=10157;
RN [1]
RP SEQUENCE.
RC TISSUE=Pancreas;
RC MEDLINE=77065676; PubMed=999896;
RA van den Berg A., van den Hende-Timmer L., Beintema J.J.;
RT "Isolation, properties and primary structure of coypu and chinchilla
RT pancreatic ribonuclease.";
RL Biochim. Biophys. Acta 453:400-409(1976).
CC -!- CATALYTIC ACTIVITY: Endonucleolytic cleavage to nucleoside 3'-
CC phosphates and 3'-phosphooligonucleotides ending in C-P or U-P
CC with 2',3'-cyclic phosphate intermediates.
CC -!- SUBCELLULAR LOCATION: Secreted.
CC -!- TISSUE SPECIFICITY: Pancreas.
CC -!- SIMILARITY: Belongs to the pancreatic ribonuclease family.
CC PIR; A00822; NRCU.
DR HSSP; P00656; 1SRN.
DR InterPro; IPR001427; RNaseA.
DR Pfam; PF00074; rnaseA; 1.
DR PRINTS; PR00794; RIBONUCLEASE.
DR ProDom; PD000535; RNaseA; 1.
DR SMART; SM00092; RNase P; 1.
DR PROSITE; PS00127; RNASE PANCREATIC; 1.
KW Hydrolase; Nuclease; Endonuclease; Glycoprotein.
FT DISULFID 26 84
FT DISULFID 40 95
FT DISULFID 58 110
FT DISULFID 65 72
FT ACT SITE 12 12
FT ACT SITE 41 41
FT ACT SITE 119 119
FT CARBOHYD 34 34
FT SEQUENCE 128 AA; 14267 MW; 4EB924E52B445832 CRC64;
Query Match 19.3%; Score 113; DB 1; Length 128;
Best Local Similarity 27.4%; Pred. No. 2.5e-05;
Matches 32; Conservative 19; Mismatches 38; Indels 28; Gaps 7;
Qy 7 FOKKHL-----TNTRDVDCNNIL-STNLF--HCKDKNTIYSPPEVKAICKGIASKNV 58
Db |||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:
8 FERQHMDSRGSPSTNPNYCNEMKSRNWTGRCRKPVTIVFHEPLADVQAVC----FQKNV 63
Qy 59 L-----TTFEVLSDCNATSRP-----CKYKIKKSTNFTVCENQ--APVHF 99
Db :|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:
64 LCKNGQTNCYOSNSNMHITDCRVTSNSDYPNCYSYRTSQEKSIVVACEGNPVVPVHF 120
RESULT 15
ANGI_PAPHA
ID_ANGI_PAPHA STANDARD; PRT; 146 AA.
AC Q8WN64;
DT 28-FEB-2003 (Rel. 41, Created)
DT 28-FEB-2003 (Rel. 41, Last sequence update)
DT 28-FEB-2003 (Rel. 41, Last annotation update)
DE Angiotensin precursor (EC 3.1.27.-) (Ribonuclease 5) (RNase 5).
GN ANG OR RNASE5.
OS Papio hamadryas (Hamadryas baboon).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Cercopitheciidae;
OC Cercopitheciinae; Papio.
OX NCBI_TaxID=9557;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=21918422; PubMed=11919285;
RA Zhang J., Rosenberg H.F.;
RT "Diversifying selection of the tumor-growth promoter angiotensin in
RT primate evolution";
RL Mol. Biol. Evol. 19:438-445(2002).
CC -!- FUNCTION: May function as a tRNA-specific ribonuclease that binds
CC to actin on the surface of endothelial cells; once bound,
CC angiotensin is endocytosed and translocated to the nucleus, thereby

```


CC ribonucleases can be expressed in bacteria without an N-terminal
 CC methionine due to the presence of a signal peptide that is cleaved by
 CC bacteria. The soluble expression of ribonuclease allows the
 CC proteins to be fused in-frame with ligand binding moieties to form
 CC cytotoxic fusion proteins. They can be used for treatment of cancer and
 CC diseases.

XX
 SQ Sequence 104 AA;

Query Match 100.0%; Score 577; DB 2; Length 104;
 Best Local Similarity 100.0%; Pred. No. 7e-62;
 Matches 104; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 SDWLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 60
 |||||
 Db 1 SDWLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 60
 |||||

QY 61 SEFYLSDCNVTSPCKYKLLKSKTNTFCVTCENQAPVHFVGVGHC 104
 |||||
 Db 61 SEFYLSDCNVTSPCKYKLLKSKTNTFCVTCENQAPVHFVGVGHC 104
 |||||

RESULT 2
 AAY28871
 ID AAY28871 standard; protein; 105 AA.
 XX
 AC AAY28871;
 XX
 DT 25-JAN-2000 (first entry)
 XX
 DE Recombinant Met(-1) RaPLR1 Gln1Ser amino acid sequence.
 XX
 KW Recombinant Met(-1) Rana pipiens ribonuclease Gln1Ser; RaPLR1; CD22;
 KW covalently bound; LL2 antibody; ligand binding moiety; cancerous B cell;
 KW Kaposi's sarcoma; human chorionic gonadotrophin; hCG; signal peptide;
 KW recombinant ribonuclease; cytotoxic fusion protein; cancer; frog;
 KW autoimmune disease; RNase.

XX
 OS Rana pipiens.
 OS Synthetic.

XX
 EH Key Location/Qualifiers
 FT Misc-difference 1 /note= "Met not found in wild type RaPLR1"
 FT Misc-difference 2 /note= "Wild type Gln replaced with Ser"
 FT
 XX
 PN WO950398-A2.
 XX
 PD 07-OCT-1999.
 XX
 PF 26-MAR-1999; 99WO-US006641.
 XX
 PR 27-MAR-1998; 98US-0079751P.
 XX
 PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
 XX
 PI Rybak SM, Newton DL;
 XX
 DR WPI; 1999-610847/52.
 DR N-PSDB; AAZ08129.
 XX
 PT New recombinant ribonucleases, used for killing target cells, e.g. for
 PT treating cancers, viral infections or autoimmune diseases.
 XX
 PS Claim 34; Page 61; 71pp; English.
 XX
 CC The present sequence is a recombinant Rana pipiens ribonuclease (RaPLR1)
 CC protein with Met at position 1 and Gln2Ser. Carboxy terminal end of
 CC recombinant RaPLR1 has a covalently bound ligand binding moiety, which
 CC can be a LL2 antibody directed against CD22 on cancerous B cells or human
 CC chorionic gonadotrophin (hCG) effective against Kaposi's sarcoma cells.
 CC Recombinant ribonucleases can be expressed in bacteria without an N-

CC terminal methionine due to the presence of a signal peptide that is
 CC cleaved by bacteria. The soluble expression of ribonuclease allows the
 CC proteins to be fused in-frame with ligand binding moieties to form
 CC cytotoxic fusion proteins. They can be used for treatment of cancer and
 CC autoimmune diseases

XX
 SQ Sequence 105 AA;

Query Match 100.0%; Score 577; DB 2; Length 105;
 Best Local Similarity 100.0%; Pred. No. 7e-62;
 Matches 104; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 SDWLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 60
 |||||
 Db 2 SDWLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 61
 |||||

QY 61 SEFYLSDCNVTSPCKYKLLKSKTNTFCVTCENQAPVHFVGVGHC 104
 |||||

Db 62 SEFYLSDCNVTSPCKYKLLKSKTNTFCVTCENQAPVHFVGVGHC 105
 |||||

RESULT 3

AAY28865

ID AAY28865 standard; protein; 104 AA.

XX
 AC AAY28865;

DT 25-JAN-2000 (first entry)

XX
 DE Rana pipiens liver ribonuclease (RaPLR1).

XX
 KW Rana pipiens liver ribonuclease; RaPLR1; covalently bound; LL2 antibody;
 KW ligand binding moiety; CD22; cancerous B cell; Kaposi's Sarcoma; frog;
 KW human chorionic gonadotrophin; hCG; recombinant ribonuclease; RNase;
 KW signal peptide; cytotoxic fusion protein; cancer; autoimmune disease.

XX
 OS Rana pipiens.

XX
 PN WO950398-A2.

XX
 PD 07-OCT-1999.

XX
 PF 26-MAR-1999; 99WO-US006641.

XX
 PR 27-MAR-1998; 98US-0079751P.

XX
 PA (USSH) US DEPT HEALTH & HUMAN SERVICES.

XX
 PI Rybak SM, Newton DL;

XX
 DR WPI; 1999-610847/52.

XX
 DR N-PSDB; AAZ08124.

XX
 PT New recombinant ribonucleases, used for killing target cells, e.g. for
 PT treating cancers, viral infections or autoimmune diseases.

XX
 PS Claim 1; Page 55; 71pp; English.

XX
 CC The present sequence is Rana pipiens liver ribonuclease (RaPLR1) protein.
 CC Carboxy terminal end of RaPLR1 has a covalently bound ligand binding
 CC moiety, which can be a LL2 antibody directed against CD22 on cancerous B
 CC cells or human chorionic gonadotrophin (hCG) effective against Kaposi's
 CC Sarcoma cells. Recombinant ribonucleases can be expressed in bacteria
 CC without an N-terminal methionine due to the presence of a signal peptide
 CC that is cleaved by bacteria. The soluble expression of ribonuclease
 CC allows the proteins to be fused in-frame with ligand binding moieties to
 CC form cytotoxic fusion proteins. They can be used for treatment of cancer
 CC and autoimmune diseases

XX
 SQ Sequence 104 AA;

Query Match 99.3%; Score 573; DB 2; Length 104;
 Best Local Similarity 100.0%; Pred. No. 2.1e-61;

Matches 103; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 2 DWLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKATCKGIIASKNVLTTTS 61
 DB 2 DWLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKATCKGIIASKNVLTTTS 61

QY 62 EFYLSDCNVTSPCKYKLKKSNTFCVTCENQAPVHFVGVGHC 104
 DB 62 EFYLSDCNVTSPCKYKLKKSNTFCVTCENQAPVHFVGVGHC 104

RESULT 4
 AAY28867
 ID AAY28867 standard; protein; 105 AA.
 XX AC AAY28867;
 XX DT 25-JAN-2000 (first entry)
 XX DE Recombinant Met (-1) RaPLR1.
 XX KW Recombinant Met (-1) Rana pipiens ribonuclease; RaPLR1; CD22; RNase;
 KW covalently bound; LL2 antibody; ligand binding moiety; cancerous B cell;
 KW Kaposi's sarcoma; human chorionic gonadotropin; hCG; signal peptide;
 KW recombinant ribonuclease; cytotoxic fusion protein; cancer; frog;
 KW autoimmune disease.
 XX OS Rana pipiens.
 XX OS Synthetic.
 XX FH Key Location/Qualifiers
 FT Misc-difference 1 /note= "Met not found in wild type RaPLR1"
 FT FT
 XX PN WO9950398-A2.
 XX PD 07-OCT-1999.
 XX PF 26-MAR-1999; 98US-0079751P.
 XX PR 27-MAR-1998; 98US-0079751P.
 XX PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
 XX PI Rybak SM, Newton DL;
 XX WPI; 1999-610847/52.
 XX DR N-PSDB; AAZ08126.
 XX PT New recombinant ribonucleases, used for killing target cells, e.g. for
 PT treating cancers, viral infections or autoimmune diseases.
 XX PS Claim 34; Page 57; 71pp; English.
 XX CC The present sequence is a recombinant Rana pipiens ribonuclease (RaPLR1).
 CC protein with Met at position 1. Carboxy terminal end of recombinant
 CC RaPLR1 has a covalently bound ligand binding moiety, which can be a LL2
 CC antibody directed against CD22 on cancerous B cells or human chorionic
 CC gonadotropin (hCG) effective against Kaposi's sarcoma cells. Recombinant
 CC ribonucleases can be expressed in bacteria without an N-terminal
 CC methionine due to the presence of a signal peptide that is cleaved by
 CC bacteria. The soluble expression of ribonuclease allows the proteins to
 CC be fused in-frame with ligand binding moieties to form cytotoxic fusion
 CC proteins. They can be used for treatment of cancer and autoimmune
 XX diseases
 XX SQ Sequence 105 AA;

Query Match 99.3%; Score 573; DB 2; Length 105;
 Best Local Similarity 100.0%; Pred. No. 2.2e-61;
 Matches 103; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

DB 3 DWLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKATCKGIIASKNVLTTTS 62
 QY 62 EFYLSDCNVTSPCKYKLKKSNTFCVTCENQAPVHFVGVGHC 104
 DB 63 EFYLSDCNVTSPCKYKLKKSNTFCVTCENQAPVHFVGVGHC 105

RESULT 5
 AAY28879
 ID AAY28879 standard; protein; 127 AA.
 XX AC AAY28879;
 XX DT 25-JAN-2000 (first entry)
 XX DE Rana pipiens Clone 5a1b ribonuclease.
 XX KW Rana pipiens ribonuclease Clone 5a1b; RaPLR1; covalently bound; RNase;
 KW LL2 antibody; ligand binding moiety; CD22; cancerous B cell; onconase;
 KW Kaposi's Sarcoma; human chorionic gonadotropin; hCG; cancer;
 KW recombinant ribonuclease; frog; signal peptide; cytotoxic fusion protein;
 KW autoimmune disease.
 XX OS Rana pipiens.
 XX FH Key Location/Qualifiers
 FT Peptide 1..23
 FT /label= "Signal peptide"
 FT /note= "Putative"
 FT 24..127
 FT Protein /label= Rana_pipiens_Clone_5a1b_ribonuclease
 XX PN WO9950398-A2.
 XX PD 07-OCT-1999.
 XX PF 26-MAR-1999; 99WO-US006641.
 XX PR 27-MAR-1998; 98US-0079751P.
 XX PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
 XX PI Rybak SM, Newton DL;
 XX WPI; 1999-610847/52.
 XX DR N-PSDB; AAZ08136.
 XX PT New recombinant ribonucleases, used for killing target cells, e.g. for
 PT treating cancers, viral infections or autoimmune diseases.
 XX PS Disclosure; Page 69; 71pp; English.
 XX CC The present sequence is a Rana pipiens Clone 5a1b ribonuclease (RaPLR1).
 CC It is encoded by Clone 5a1b cDNA obtained from Rana pipiens liver mRNA
 CC library. It exhibits differences with Onconase (RNase) at amino acid
 CC residues 11, 20, 85 and 103. Carboxy terminal end of RaPLR1 has a
 CC covalently bound ligand binding moiety, which can be a LL2 antibody
 CC directed against CD22 on cancerous B cells or human chorionic
 CC gonadotropin (hCG) effective against Kaposi's Sarcoma cells. Recombinant
 CC ribonucleases can be expressed in bacteria without an N-terminal
 CC methionine due to the presence of a signal peptide that is cleaved by
 CC bacteria. The soluble expression of ribonuclease allows the proteins to
 CC be fused in-frame with ligand binding moieties to form cytotoxic fusion
 CC proteins. They can be used for treatment of cancer and autoimmune
 XX diseases
 XX SQ Sequence 127 AA;

Query Match 99.3%; Score 573; DB 2; Length 127;
 Best Local Similarity 100.0%; Pred. No. 2.7e-61;
 Matches 103; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 2 DWLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKATCKGIIASKNVLTTTS 61


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Db      3 DMLTFQKKHLTNRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 62
Qy      62 EFYLSDCNVTSRPCKYKLGKSTNTFCVTCENQAPVHFVGVC 104
Db      63 EFYLSDCNVTSRPCKYKLGKSTNTFCVTCENQAPVHFVGVC 105

RESULT 8
AAW06544
ID      AAW06544 standard; protein; 104 AA.
XX
AC      AAW06544;
XX
XX      22-AUG-1997 (first entry)
XX
XX      Antitumour protein from Rana pipiens oocytes.
XX      Tumour; chemotherapy; radiotherapy; frog.
XX
XX      Rana pipiens.
XX
XX      WO9639428-A1.
XX
XX      12-DEC-1996.
XX
XX      03-JUN-1996; 96WO-US008304.
XX
XX      06-JUN-1995; 95US-00467955.
XX
XX      (ALFA-) ALFACELL CORP.
XX
XX      Ardelt WJ;
XX
XX      WPI; 1997-043063/04.
XX
XX      Antitumour proteins from Rana pipiens oocyte(s) - have fewer
XX      disadvantages than chemotherapy, surgery and radiotherapy.
XX
XX      Claim 8; Page 28; 45pp; English.
XX
XX      The present sequence is a specifically claimed example of an antitumour
XX      protein from the generic protein in AAW18224, with the molecular weight
XX      12000. This is one of two preferred proteins (the other in AAW06543) that
XX      have been isolated from Rana pipiens oocytes. Both proteins have a
XX      blocked amino terminal group and are essentially free of carbohydrates.
XX      The proteins are used to treat tumours. Use of the peptides has fewer
XX      disadvantages than chemotherapy, radiotherapy and surgery in the
XX      treatment of tumours
XX
XX      Sequence 104 AA;
XX
XX      Query Match      96.4%; Score 556; DB 2; Length 104;
XX      Best Local Similarity 97.1%; Pred. No. 2.5e-59;
XX      Matches 100; Conservative 1; Mismatches 2; Indels 0; Gaps 0;

Qy      2 DMLTFQKKHLTNRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 61
Db      2 DMLTFQKKHLTNRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 61

Qy      62 EFYLSDCNVTSRPCKYKLGKSTNTFCVTCENQAPVHFVGVC 104
Db      62 EFYLSDCNVTSRPCKYKLGKSTNTFCVTCENQAPVHFVGVC 104

RESULT 9
AAW35118
ID      AAW35118 standard; protein; 112 AA.
XX
AC      AAW35118;
XX
XX      20-APR-1998 (first entry)
XX
XX      R. pipiens recombinant RNase protein NLSmetSerrOnc.

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XX      RNase A; ribonuclease; cytotoxic; onconase; nOnc; immunofusion;
XX      tumour cell growth; frog.
XX
XX      Rana pipiens.
XX
XX      WO9731116-A2.
XX
XX      28-AUG-1997.
XX
XX      19-FEB-1997; 97WO-US002588.
XX
XX      21-FEB-1996; 96US-0011800P.
XX
XX      (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
XX      Rybak SM, Newton DL, Boque L, Wlodawer A;
XX
XX      WPI; 1997-435168/40.
XX
XX      N-ESDB; AAT94955.
XX
XX      Ribonuclease molecules based on native Onconase - used for killing cells,
XX      particularly tumour cells.
XX
XX      Claim 18; Page 63; 90pp; English.
XX
XX      AAW35115 to AAW35123 encode recombinant proteins (rOnc) which are
XX      modifications of the RNase Onconase (RTM) (nOnc). Such novel ribonuclease
XX      molecules are highly cytotoxic and can be used alone or to form chemical
XX      conjugates or to target recombinant immunofusions. They are used
XX      particularly for decreasing tumour cell growth. They can also be used for
XX      cell separation in vitro by selectively killing unwanted types of cells,
XX      e.g. in bone marrow prior to transplantation into a patient undergoing
XX      marrow ablation by radiation, or for killing leukaemia cells or T-cells
XX      that would cause graft versus host disease. The toxins can also be used
XX      to selectively kill unwanted cells in culture. The new ribonucleases have
XX      increased cytotoxic activity compared to nOnc and also lower
XX      immunogenicity in humans
XX
XX      Sequence 112 AA;
XX
XX      Query Match      96.2%; Score 555; DB 2; Length 112;
XX      Best Local Similarity 96.2%; Pred. No. 3.6e-59;
XX      Matches 100; Conservative 2; Mismatches 2; Indels 0; Gaps 0;

Qy      1 SDWLTFQKKHLTNRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 60
Db      9 SDWLTFQKKHLTNRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 68

Qy      61 SEFYLSDCNVTSRPCKYKLGKSTNTFCVTCENQAPVHFVGVC 104
Db      69 SEFYLSDCNVTSRPCKYKLGKSTNTFCVTCENQAPVHFVGVC 112

RESULT 10
AAW35134
ID      AAW35134 standard; protein; 251 AA.
XX
AC      AAW35134;
XX
XX      20-APR-1998 (first entry)
XX
XX      R. pipiens recombinant RNase rOnc fusion protein 10.
XX
XX      RNase A; ribonuclease; cytotoxic; onconase; nOnc; immunofusion;
XX      tumour cell growth; frog.
XX
XX      Rana pipiens.
XX      Synthetic.
XX
XX      WO9731116-A2.
XX
XX      28-AUG-1997.

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XX PF 19-FEB-1997; 97WO-US002588.
XX PR 21-FEB-1996; 96US-0011800P.
XX PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX PI Rybak SM, Newton DL, Boque L, Wlodawer A;
XX DR WPI; 1997-435168/40.
XX DR N-PSDB; AAT94972.
XX PT Ribonuclease molecules based on native Onconase - used for killing cells,
XX PT particularly tumour cells.
XX PS Disclosure; Page 76; 90pp; English.
XX CC Sequences AAW35125 to AAW35135 represent recombinant fusion proteins
CC (rOnc) which are modifications of the RNase Onconase (RTM) (nOnc). Such
CC novel ribonuclease molecules are highly cytotoxic and can be used alone
CC or to form chemical conjugates or to target recombinant immunofusions.
CC They are used particularly for decreasing tumour cell growth. They can
CC also be used for cell separation in vitro by selectively killing unwanted
CC types of cells, e.g. in bone marrow prior to transplantation into a
CC patient undergoing marrow ablation by radiation, or for killing leukaemia
CC cells or T-cells that would cause graft versus host disease. The toxins
CC can also be used to selectively kill unwanted cells in culture. The new
CC ribonucleases have increased cytotoxic activity compared to nOnc and also
CC lower immunogenicity in humans
XX CC
XX SQ Sequence 251 AA;
XX Query Match 96.2%; Score 555; DB 2; Length 251;
XX Best Local Similarity 96.2%; Pred. No. 1e-58;
XX Matches 100; Conservative 2; Mismatches 2; Indels 0; Gaps 0;
QY 1 SDWLTFOKKHLNTRDVCNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 60
Db 148 SDWLTFOKKHIINTRDVCNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 207
QY 61 SEFYLSDCNVTSRPCKYKLKSKTNTFCVTCENQAPVHFVGVGHC 104
Db 208 SEFYLSDCNVTSRPCKYKLKSKTNTFCVTCENQAPVHFVGVGSC 251
RESULT 11
AAW35135
ID AAW35135 standard; protein; 254 AA.
XX AC AAW35135;
XX DT 20-APR-1998 (first entry)
XX DE R. pipiens recombinant RNase rOnc fusion protein 11.
XX KW RNase A; ribonuclease; cytotoxic; onconase; nOnc; immunofusion;
XX KW tumour cell growth; frog.
XX OS Rana pipiens.
XX OS Synthetic.
XX PN WO9731116-A2.
XX PD 28-AUG-1997.
XX PF 19-FEB-1997; 97WO-US002588.
XX PR 21-FEB-1996; 96US-0011800P.
XX PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX PI Rybak SM, Newton DL, Boque L, Wlodawer A;
XX CC

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DR WPI; 1997-435168/40.
DR N-PSDB; AAT94973.
XX Ribonuclease molecules based on native Onconase - used for killing cells,
XX PT particularly tumour cells.
XX PS Disclosure; Page 77; 90pp; English.
XX CC Sequences AAW35125 to AAW35135 represent recombinant fusion proteins
CC (rOnc) which are modifications of the RNase Onconase (RTM) (nOnc). Such
CC novel ribonuclease molecules are highly cytotoxic and can be used alone
CC or to form chemical conjugates or to target recombinant immunofusions.
CC They are used particularly for decreasing tumour cell growth. They can
CC also be used for cell separation in vitro by selectively killing unwanted
CC types of cells, e.g. in bone marrow prior to transplantation into a
CC patient undergoing marrow ablation by radiation, or for killing leukaemia
CC cells or T-cells that would cause graft versus host disease. The toxins
CC can also be used to selectively kill unwanted cells in culture. The new
CC ribonucleases have increased cytotoxic activity compared to nOnc and also
XX CC lower immunogenicity in humans
XX SQ Sequence 254 AA;
XX Query Match 96.2%; Score 555; DB 2; Length 254;
XX Best Local Similarity 96.2%; Pred. No. 1e-58;
XX Matches 100; Conservative 2; Mismatches 2; Indels 0; Gaps 0;
QY 1 SDWLTFOKKHLNTRDVCNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 60
Db 2 SDWLTFOKKHIINTRDVCNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 61
QY 61 SEFYLSDCNVTSRPCKYKLKSKTNTFCVTCENQAPVHFVGVGHC 104
Db 62 SEFYLSDCNVTSRPCKYKLKSKTNTFCVTCENQAPVHFVGVGSC 105
RESULT 12
AAW35133
ID AAW35133 standard; protein; 355 AA.
XX AC AAW35133;
XX DT 20-APR-1998 (first entry)
XX DE R. pipiens recombinant RNase rOnc fusion protein 9.
XX KW RNase A; ribonuclease; cytotoxic; onconase; nOnc; immunofusion;
XX KW tumour cell growth; frog.
XX OS Rana pipiens.
XX OS Synthetic.
XX PN WO9731116-A2.
XX PD 28-AUG-1997.
XX PF 19-FEB-1997; 97WO-US002588.
XX PR 21-FEB-1996; 96US-0011800P.
XX PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX PI Rybak SM, Newton DL, Boque L, Wlodawer A;
XX CC
XX WPI; 1997-435168/40.
XX DR N-PSDB; AAT94971.
XX Ribonuclease molecules based on native Onconase - used for killing cells,
XX PT particularly tumour cells.
XX PS Disclosure; Page 75; 90pp; English.
XX CC Sequences AAW35125 to AAW35135 represent recombinant fusion proteins

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CC (rOnc) which are modifications of the RNase Onconase (RTM) (nOnc). Such
 CC novel ribonuclease molecules are highly cytotoxic and can be used alone
 CC or to form chemical conjugates or to target recombinant immunofusions.
 CC They are used particularly for decreasing tumour cell growth. They can
 CC also be used for cell separation in vitro by selectively killing unwanted
 CC types of cells, e.g. in bone marrow prior to transplantation into a
 CC patient undergoing marrow ablation by radiation, or for killing leukaemia
 CC cells or T-cells that would cause graft versus host disease. The toxins
 CC can also be used to selectively kill unwanted cells in culture. The new
 CC ribonucleases have increased cytotoxic activity compared to nOnc and also
 CC lower immunogenicity in humans

XX Sequence 355 AA;

Query Match 96.2%; Score 555; DB 2; Length 355;
 Best Local Similarity 96.2%; Pred. No. 1.6e-58;
 Matches 100; Conservative 2; Mismatches 2; Indels 0; Gaps 0;

QY 1 SDWLTFOKKHLTNTRDVCNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 60
 |||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||
 Db 2 SDWLTFOKKHLTNTRDVCNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 61

QY 61 SEFYLSDCNVTSRPCKYKLLKXSTNTFCVTCENQAPVHFVGVGHC 104
 |||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||
 Db 62 SEFYLSDCNVTSRPCKYKLLKXSTNTFCVTCENQAPVHFVGVGSC 105

RESULT 13
 AAW35129
 ID AAW35129 standard; protein; 355 AA.

XX AAW35129;

XX 20-APR-1998 (first entry)

XX R. pipiens recombinant RNase rOnc fusion protein 5.

XX RNase A; ribonuclease; cytotoxic; onconase; nOnc; immunofusion;
 KW tumour cell growth; frog.

XX Rana pipiens.

OS Synthetic.

XX WO9731116-A2.

XX 28-AUG-1997.

XX 19-FEB-1997; 97WO-US002588.

XX 21-FEB-1996; 96US-0011800P.

XX (USSH) US DEPT HEALTH & HUMAN SERVICES.

XX Rybak SM, Newton DL, Boque L, Wlodawer A;

XX WPI; 1997-435168/40.

XX N-PSDB; AAT94967.

XX Ribonuclease molecules based on native Onconase - used for killing cells,
 PT particularly tumour cells.

XX Disclosure; Page 71; 90pp; English.

XX Sequences AAW35125 to AAW35135 represent recombinant fusion proteins
 CC (rOnc) which are modifications of the RNase Onconase (RTM) (nOnc). Such
 CC novel ribonuclease molecules are highly cytotoxic and can be used alone
 CC or to form chemical conjugates or to target recombinant immunofusions.
 CC They are used particularly for decreasing tumour cell growth. They can
 CC also be used for cell separation in vitro by selectively killing unwanted
 CC types of cells, e.g. in bone marrow prior to transplantation into a
 CC patient undergoing marrow ablation by radiation, or for killing leukaemia
 CC cells or T-cells that would cause graft versus host disease. The toxins
 CC can also be used to selectively kill unwanted cells in culture. The new

CC ribonucleases have increased cytotoxic activity compared to nOnc and also
 CC lower immunogenicity in humans

XX Sequence 355 AA;

Query Match 96.2%; Score 555; DB 2; Length 355;
 Best Local Similarity 96.2%; Pred. No. 1.6e-58;
 Matches 100; Conservative 2; Mismatches 2; Indels 0; Gaps 0;

QY 1 SDWLTFOKKHLTNTRDVCNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 60
 |||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||
 Db 252 SDWLTFOKKHLTNTRDVCNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 311

QY 61 SEFYLSDCNVTSRPCKYKLLKXSTNTFCVTCENQAPVHFVGVGHC 104
 |||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||
 Db 312 SEFYLSDCNVTSRPCKYKLLKXSTNTFCVTCENQAPVHFVGVGSC 355

RESULT 14
 AAW35132
 ID AAW35132 standard; protein; 366 AA.

XX AAW35132;

XX 20-APR-1998 (first entry)

XX R. pipiens recombinant RNase rOnc fusion protein 8.

XX RNase A; ribonuclease; cytotoxic; onconase; nOnc; immunofusion;
 KW tumour cell growth; frog.

XX Rana pipiens.

OS Synthetic.

XX WO9731116-A2.

XX 28-AUG-1997.

XX 19-FEB-1997; 97WO-US002588.

XX 21-FEB-1996; 96US-0011800P.

XX (USSH) US DEPT HEALTH & HUMAN SERVICES.

XX Rybak SM, Newton DL, Boque L, Wlodawer A;

XX WPI; 1997-435168/40.

XX N-PSDB; AAT94970.

XX Ribonuclease molecules based on native Onconase - used for killing cells,
 PT particularly tumour cells.

XX Disclosure; Page 74; 90pp; English.

XX Sequences AAW35125 to AAW35135 represent recombinant fusion proteins
 CC (rOnc) which are modifications of the RNase Onconase (RTM) (nOnc). Such
 CC novel ribonuclease molecules are highly cytotoxic and can be used alone
 CC or to form chemical conjugates or to target recombinant immunofusions.
 CC They are used particularly for decreasing tumour cell growth. They can
 CC also be used for cell separation in vitro by selectively killing unwanted
 CC types of cells, e.g. in bone marrow prior to transplantation into a
 CC patient undergoing marrow ablation by radiation, or for killing leukaemia
 CC cells or T-cells that would cause graft versus host disease. The toxins
 CC can also be used to selectively kill unwanted cells in culture. The new
 CC ribonucleases have increased cytotoxic activity compared to nOnc and also
 CC lower immunogenicity in humans

XX Sequence 366 AA;

Query Match 96.2%; Score 555; DB 2; Length 366;
 Best Local Similarity 96.2%; Pred. No. 1.6e-58;
 Matches 100; Conservative 2; Mismatches 2; Indels 0; Gaps 0;

Search completed: May 7, 2004, 21:38:27
Job time : 44.363 secs

Qy 1 SDWLTFOKKHLLTNRDVCNNIMSTNLFHCKDKNTFYISRPVPVKAICKGIIASKNVLTT 60
Db 263 SDWLTFOKKHLLTNRDVCDDNIMSTNLFHCKDKNTFYISRPVPVKAICKGIIASKNVLTT 322
Qy 61 SEFYLSDCNVTSRPCKYKLLKSTNTFCVTCENQAPVHFVGVC 104
Db 323 SEFYLSDCNVTSRPCKYKLLKSTNTFCVTCENQAPVHFVGVC 366

RESULT 15

AAR12344
ID AAR12344 standard; protein; 104 AA.

XX AC AAR12344;

XX DT 08-AUG-1991 (first entry)

XX DE Protein with activity against cancer cells.

XX KW Frog eggs; Tamoxifen; Stelazine; cancer.

XX OS Rana pipiens.

XX PN WO9107435-A.

XX PD 30-MAY-1991.

XX PF 13-NOV-1989; 89US-00436141.

XX PR 13-NOV-1989; 89US-00436141.

XX PA 18-MAY-1990; 90US-00526314.

XX (ALFA-) ALFACELL CORP.

XX PI Ardelt WJ, Mikulski SM;

XX DR WPI; 1991-178059/24.

XX PT New protein from fertilised eggs of Rana pipiens - active against cancer
cells, esp. in combination with Tamoxifen or Stelazine (trifluoro-per-
azine).

PS Claim 7; Fig 2; 33pp; English.

XX The protein is derived from fertilised frog eggs. It has an iso-
electric point of 9.5 - 10.5, a blocked N-terminal gp. and is free of
carbohydrates. It is active against certain cancer cells. The combination
of the protein and (2-1-p-dimethylaminoethoxyphenyl)-1, 2-diphenyl-1-
butene) citrate salt (Tamoxifen) is much more bio- active than the
separate entities against human pancreatic ASPC-1 adenocarcinoma, and the
combination of protein and (10-[3-(4-methyl piperazin-1-yl)-propyl]-2-
trifluoromethylphenothiazine (Stelazine) is much more reactive than the
separate entities against human lung A-549 carcinoma. Activity has also
been shown against human sub- maxillary epidermoid carcinoma A-253
cells, human ovarian adeno- carcinoma NIH-OVCAR-3 cells, human leukaemic
HL-60 cells, human COLO 320 DM cells, human LOX melanoma and human lung
squamous car- cinoma HT-520 cells

SQ Sequence 104 AA;

Query Match 95.5%; Score 551; DB 2; Length 104;
Best Local Similarity 96.1%; Pred. No. 9.9e-59;
Matches 99; Conservative 2; Mismatches 2; Indels 0; Gaps 0;

Qy 2 DWTFOKKHLLTNRDVCNNIMSTNLFHCKDKNTFYISRPVPVKAICKGIIASKNVLTT 61

Db 2 DWTFOKKHLLTNRDVCDDNIMSTNLFHCKDKNTFYISRPVPVKAICKGIIASKNVLTT 61

Qy 62 EFYLSDCNVTSRPCKYKLLKSTNTFCVTCENQAPVHFVGVC 104

Db 62 EFYLSDCNVTSRPCKYKLLKSTNTFCVTCENQAPVHFVGVC 104

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OM protein - protein search, using sw model

Run on: May 7, 2004, 21:28:45 ; Search time 12.0636 seconds
(without alignments)

445.066 Million cell updates/sec

Title: US-09-961-400-11

Perfect score: 577

Sequence: 1 SDMLTFQKKHLNTRDVCN.....TFCVTCENQAPVHFVGVC 104

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 389414 seqs, 51625971 residues

Total number of hits satisfying chosen parameters: 389414

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database : Issued Patents AA:*
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2: /cgn2_6/ptodata/2/iaa/5B COMB.pap:*
3: /cgn2_6/ptodata/2/iaa/6A COMB.pap:*
4: /cgn2_6/ptodata/2/iaa/6B COMB.pap:*
5: /cgn2_6/ptodata/2/iaa/PCTUS COMB.pap:*
6: /cgn2_6/ptodata/2/iaa/backfiles1.pap:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	556	96.4	104	1	US-08-467-955-2
2	555	96.2	112	3	US-08-875-811-32
3	555	96.2	251	3	US-08-875-811-59
4	555	96.2	254	3	US-08-875-811-61
5	555	96.2	355	3	US-08-875-811-49
6	555	96.2	355	3	US-08-875-811-57
7	555	96.2	355	3	US-08-875-811-64
8	555	96.2	366	3	US-08-875-811-55
9	551	95.5	104	1	US-08-283-971-1
10	551	95.5	104	1	US-07-921-619-1
11	551	95.5	104	1	US-08-467-955-1
12	551	95.5	104	2	US-08-891-848-13
13	551	95.5	104	3	US-08-875-811-1
14	551	95.5	104	3	US-09-394-268-1
15	551	95.5	104	4	US-09-071-672-1
16	551	95.5	104	4	US-09-687-748-1
17	551	95.5	104	4	US-08-626-288-1
18	551	95.5	104	4	US-09-095-429-1
19	551	95.5	104	4	US-09-986-119-1
20	551	95.5	105	3	US-08-875-811-39
21	551	95.5	106	3	US-08-875-811-28
22	551	95.5	107	3	US-08-875-811-30
23	551	95.5	129	3	US-08-875-811-63
24	551	95.5	355	3	US-08-875-811-41
25	551	95.5	358	3	US-08-875-811-51
26	551	95.5	379	3	US-08-875-811-43
27	550	95.3	105	3	US-08-875-811-26

28 548 95.0 104 4 US-08-626-288-2 Sequence 2, Appli
29 548 95.0 104 4 US-09-095-429-2 Sequence 2, Appli
30 546 94.6 105 3 US-08-875-811-24 Sequence 24, Appl
31 546 94.6 358 3 US-08-875-811-45 Sequence 45, Appl
32 546 94.6 365 3 US-08-875-811-53 Sequence 53, Appl
33 543 94.1 104 3 US-09-394-268-2 Sequence 2, Appli
34 543 94.1 104 4 US-09-687-748-2 Sequence 2, Appli
35 531 92.0 107 3 US-08-875-811-20 Sequence 20, Appl
36 494 85.6 360 3 US-08-875-811-47 Sequence 47, Appl
37 484.5 84.0 111 3 US-08-875-811-22 Sequence 22, Appl
38 445 77.1 83 3 US-08-875-811-2 Sequence 2, Appli
39 445 77.1 83 4 US-03-071-672-3 Sequence 3, Appli
40 445 77.1 83 4 US-09-986-119-3 Sequence 3, Appli
41 287 49.7 111 2 US-08-891-848-12 Sequence 12, Appl
42 287 49.7 111 3 US-08-875-811-8 Sequence 8, Appli
43 216.5 37.5 114 3 US-09-223-118-4 Sequence 4, Appli
44 204.5 35.4 114 3 US-09-223-118-2 Sequence 2, Appli
45 203.5 35.3 114 3 US-09-223-118-1 Sequence 1, Appli

ALIGNMENTS

RESULT 1

US-08-467-955-2
; Sequence 2, Application US/08467955
; Patent No. 5728805
; GENERAL INFORMATION:
; APPLICANT: Ardelt Ph.D, Wojciech J.
; TITLE OF INVENTION: PHARMACEUTICALS AND METHOD FOR MAKING THEM
; NUMBER OF SEQUENCES: 2
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Mark H. Jay, P.A.
; STREET: P.O. Box E
; CITY: Short Hills
; STATE: New Jersey
; COUNTRY: USA
; ZIP: 07078-0383
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent In Release #1.24
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/467,955
; FILING DATE:
; CLASSIFICATION: 435
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 07/178,118
; FILING DATE: 06-APR-1988
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 07/436,141
; FILING DATE: 13-NOV-1989
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 07/814,332
; FILING DATE: 03-FEB-1992
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 08/283,970
; FILING DATE: 01-AUG-1994
; ATTORNEY/AGENT INFORMATION:
; NAME: Jay, Mark H.
; REGISTRATION NUMBER: 27507
; REFERENCE/DOCKET NUMBER: 5007 US
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 201-912-9066
; TELEFAX: 201-912-0442
; TELEX: No. 5728805 Applicable
; INFORMATION FOR SEQ ID NO: 2:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 104 amino acids
; TYPE: amino acid
; STRANDEDNESS: single
; TOPOLOGY: linear

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; MOLECULE TYPE: protein
; HYPOTHETICAL: N
; ANTI-SENSE: N
; FRAGMENT TYPE: N-terminal
; ORIGINAL SOURCE:
; ORGANISM: Rana pipiens
; DEVELOPMENTAL STAGE: Oocyte
US-08-467-955-2

Query Match          96.4%; Score 556; DB 1; Length 104;
Best Local Similarity 97.1%; Pred. No. 2.8e-60;
Matches 100; Conservative 1; Mismatches 2; Indels 0; Gaps 0;

QY 2 DWLTFQKKHITNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTTS 61
Db 2 DWLTFQKKHITNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTTS 61

QY 62 EFYLSDCNVTSRPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 104
Db 62 EFYLSDCNVTSRPCKYKLLKSTNTFCVTCENQAPVHFVGVGRC 104

RESULT 2
US-08-875-811-32
; Sequence 32, Application US/08875811
; Patent No. 6045793
; GENERAL INFORMATION:
; APPLICANT: Rybak, Susanna M.
; APPLICANT: Newton, Dianne L.
; APPLICANT: Boque, Lluis
; APPLICANT: Wlodawer, Alexander
; TITLE OF INVENTION: Recombinant Ribonuclease Proteins
; NUMBER OF SEQUENCES: 64
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Townsend and Townsend and Crew LLP
; STREET: Two Embarcadero Center, Eighth Floor
; CITY: San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94111-3834
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent In Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/875,811
; FILING DATE: 19-FEB-1998
; CLASSIFICATION: 435
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: WO PCT/US97/02588
; FILING DATE: 19-FEB-1997
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent In Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/875,811
; FILING DATE: 19-FEB-1998
; CLASSIFICATION: 435
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: WO PCT/US97/02588
; FILING DATE: 19-FEB-1997
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 60/011,800
; FILING DATE: 21-FEB-1996
; ATTORNEY/AGENT INFORMATION:
; NAME: Paris, Susan K.
; REGISTRATION NUMBER: 41,739
; REFERENCE/DOCKET NUMBER: 015280-2441000S
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (415) 576-0200
; TELEFAX: (415) 576-0300
; INFORMATION FOR SEQ ID NO: 32:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 112 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: protein
US-08-875-811-32

Query Match          96.2%; Score 555; DB 3; Length 112;
Best Local Similarity 96.2%; Pred. No. 4.1e-60;
Matches 100; Conservative 2; Mismatches 2; Indels 0; Gaps 0;

QY 1 SDWLTFQKKHITNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 60
Db 1 SDWLTFQKKHITNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 60

QY 61 SEFYLSDCNVTSRPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 104
Db 61 SEFYLSDCNVTSRPCKYKLLKSTNTFCVTCENQAPVHFVGVGSC 104

RESULT 3
US-08-875-811-59
; Sequence 59, Application US/08875811
; Patent No. 6045793
; GENERAL INFORMATION:
; APPLICANT: Rybak, Susanna M.
; APPLICANT: Newton, Dianne L.
; APPLICANT: Boque, Lluis
; APPLICANT: Wlodawer, Alexander
; TITLE OF INVENTION: Recombinant Ribonuclease Proteins
; NUMBER OF SEQUENCES: 64
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Townsend and Townsend and Crew LLP
; STREET: Two Embarcadero Center, Eighth Floor
; CITY: San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94111-3834
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent In Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/875,811
; FILING DATE: 19-FEB-1998
; CLASSIFICATION: 435
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: WO PCT/US97/02588
; FILING DATE: 19-FEB-1997
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent In Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US 60/011,800
; FILING DATE: 21-FEB-1996
; ATTORNEY/AGENT INFORMATION:
; NAME: Paris, Susan K.
; REGISTRATION NUMBER: 41,739
; REFERENCE/DOCKET NUMBER: 015280-2441000S
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (415) 576-0200
; TELEFAX: (415) 576-0300
; INFORMATION FOR SEQ ID NO: 59:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 251 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: protein
US-08-875-811-59

Query Match          96.2%; Score 555; DB 3; Length 251;
Best Local Similarity 96.2%; Pred. No. 1.2e-59;
Matches 100; Conservative 2; Mismatches 2; Indels 0; Gaps 0;

QY 1 SDWLTFQKKHITNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 60
Db 1 SDWLTFQKKHITNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 60

QY 61 SEFYLSDCNVTSRPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 104
Db 61 SEFYLSDCNVTSRPCKYKLLKSTNTFCVTCENQAPVHFVGVGSC 104

RESULT 4
US-08-875-811-61
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us-09-961-400-11.rai

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: CITY: San Francisco
: STATE: California
: COUNTRY: USA
: ZIP: 94111-3834
: COMPUTER READABLE FORM:
: MEDIUM TYPE: Floppy disk
: COMPUTER: IBM PC compatible
: OPERATING SYSTEM: PC-DOS/MS-DOS
: SOFTWARE: Patentin Release #1.0, Version #1.30
: CURRENT APPLICATION DATA:
: APPLICATION NUMBER: US/08/875,811
: FILING DATE: 19-FEB-1998
:

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PRIOR APPLICATION DATA: US 60/011,800
APPLICATION NUMBER: 21-FEB-1996
FILING DATE: 21-FEB-1996
ATTORNEY/AGENT INFORMATION:
NAME: Faris, Susan K.

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/ TELEFAX: (415) 578-0300
/ INFORMATION FOR SEQ ID NO: 49:
/ SEQUENCE CHARACTERISTICS:
/ LENGTH: 355 amino acids
/ TYPE: amino acid
/ TOPOLOGY: linear
/ MOLECULE TYPE: protein
/ US-08-875,811-49

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Query Match 96.2%; Score 555; DB 3; Length 355;

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Qy	61	SEFYISDCNVTSRPCKYKLKKSTNTFCVTCENQAPVHFGVGHCC	104	
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RESULT 6
US-08-875-811-57
; Sequence 57, Application US/08875811
; Patent No. 6045793

; Patent NO. 6045793
 ; GENERAL INFORMATION:
 ; APPLICANT: Rybak, Susanna M.
 ; APPLICANT: Newton, Dianne L.
 ; APPLICANT: Boque, Iluis
 ; APPLICANT: Wlodawer, Alexander
 ; TITLE OF INVENTION: Recombinant Ribonuclease Proteins
 ; NUMBER OF SEQUENCES: 64
 ; NUMBER OF SEQUENCE ADDRESSES:

ADDRESS: Townsend and Townsend and Crew and
STREET: Two Embarcadero Center, Eighth Floor
CITY: San Francisco
STATE: California
COUNTRY: USA
ZIP: 94111-3834
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/875,811
FILING DATE: 19-FEB-1998

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;; CLASSIFICATION: 435
;; PRIOR APPLICATION DATA:
;; APPLICATION NUMBER: WO PCT/US97/02588
;; FILING DATE: 19-FEB-1997
;; PRIOR APPLICATION DATA:
;; APPLICATION NUMBER: US 60/011,800
;; FILING DATE: 21-FEB-1996
;; ATTORNEY/AGENT INFORMATION:
;; NAME: Faris, Susan K.
;; REGISTRATION NUMBER: 41,739
;; REFERENCE/DOCKET NUMBER: 015280-244100US
;; TELECOMMUNICATION INFORMATION:
;; TELEPHONE: (415) 576-0200
;; TELEFAX: (415) 576-0300
;; INFORMATION FOR SEQ ID NO: 57:
;; SEQUENCE CHARACTERISTICS:
;; LENGTH: 355 amino acids
;; TYPE: amino acid
;; TOPOLOGY: linear
;; MOLECULE TYPE: protein
US-08-875-811-57

Query Match 96.2%; Score 555; DB 3; Length 355;
Best Local Similarity 96.2%; Pred. No. 1.8e-59;
Matches 100; Conservative 2; Mismatches 2; Indels 0; Gaps 0;

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Db 2 SDWLTFQKKHITNTRDVCNNIMSTNLFHCKDKNTFYSRPEPVKAICKGIIASKNVLTT 61
QY 61 SEFYSDCNVTSRCPCKYKLLKSTNFCVTCENQAPVHFVGVGHC 104
Db 62 SEFYSDCNVTSRCPCKYKLLKSTNFCVTCENQAPVHFVGVGSC 105
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RESULT 7
US-08-875-811-64
; Sequence 64, Application US/08875811
; Patent No. 6045793
; GENERAL INFORMATION:
; APPLICANT: Rybak, Susanna M.
; APPLICANT: Newton, Dianne L.
; APPLICANT: Boque, Lluís
; APPLICANT: Wlodawer, Alexander
; TITLE OF INVENTION: Recombinant Ribonuclease Proteins
; NUMBER OF SEQUENCES: 64
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Townsend and Townsend and Crew LLP
; STREET: Two Embarcadero Center, Eighth Floor
; CITY: San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94111-3834
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent In Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/875,811
; FILING DATE: 19-FEB-1998
; CLASSIFICATION: 435
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: WO PCT/US97/02588
; FILING DATE: 19-FEB-1997
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 60/011,800
; FILING DATE: 21-FEB-1996
; ATTORNEY/AGENT INFORMATION:
; NAME: Faris, Susan K.
; REGISTRATION NUMBER: 41,739
; REFERENCE/DOCKET NUMBER: 015280-244100US
; TELECOMMUNICATION INFORMATION:
```

```
;; TELEPHONE: (415) 576-0200
;; TELEFAX: (415) 576-0300
;; INFORMATION FOR SEQ ID NO: 64:
;; SEQUENCE CHARACTERISTICS:
;; LENGTH: 355 amino acids
;; TYPE: amino acid
;; STRANDEDNESS:
;; TOPOLOGY: linear
;; MOLECULE TYPE: protein
;; FEATURE:
;; NAME/KEY: Protein
;; LOCATION: 1..355
;; OTHER INFORMATION: /note= "EGFB[Met-(-1)]SerrOnc"
US-08-875-811-64

Query Match 96.2%; Score 555; DB 3; Length 355;
Best Local Similarity 96.2%; Pred. No. 1.8e-59;
Matches 100; Conservative 2; Mismatches 2; Indels 0; Gaps 0;

QY 1 SDWLTFQKKHLTNTRDVCNNIMSTNLFHCKDKNTFYSRPEPVKAICKGIIASKNVLTT 60
Db 252 SDWLTFQKKHITNTRDVCNNIMSTNLFHCKDKNTFYSRPEPVKAICKGIIASKNVLTT 311
QY 61 SEFYSDCNVTSRCPCKYKLLKSTNFCVTCENQAPVHFVGVGHC 104
Db 312 SEFYSDCNVTSRCPCKYKLLKSTNFCVTCENQAPVHFVGVGSC 355
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RESULT 8
US-08-875-811-55
; Sequence 55, Application US/08875811
; Patent No. 6045793
; GENERAL INFORMATION:
; APPLICANT: Rybak, Susanna M.
; APPLICANT: Newton, Dianne L.
; APPLICANT: Boque, Lluís
; APPLICANT: Wlodawer, Alexander
; TITLE OF INVENTION: Recombinant Ribonuclease Proteins
; NUMBER OF SEQUENCES: 64
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Townsend and Townsend and Crew LLP
; STREET: Two Embarcadero Center, Eighth Floor
; CITY: San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94111-3834
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent In Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/875,811
; FILING DATE: 19-FEB-1998
; CLASSIFICATION: 435
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: WO PCT/US97/02588
; FILING DATE: 19-FEB-1997
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 60/011,800
; FILING DATE: 21-FEB-1996
; ATTORNEY/AGENT INFORMATION:
; NAME: Faris, Susan K.
; REGISTRATION NUMBER: 41,739
; REFERENCE/DOCKET NUMBER: 015280-244100US
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (415) 576-0200
; TELEFAX: (415) 576-0300
; INFORMATION FOR SEQ ID NO: 55:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 366 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
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MOLECULE TYPE: protein
US-08-875-811-55

Query Match 96.2%; Score 555; DB 3; Length 366;
Best Local Similarity 96.2%; Pred. No. 1.9e-59;

Matches 100; Conservative 2; Mismatches 2; Indels 0; Gaps 0;

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DB 263 SDWLTFOKKHLTNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 322

RESULT 9

US-08-283-971-1
; Sequence 1, Application US/08283971
; Patent No. 5529775
; GENERAL INFORMATION:
; APPLICANT: Ardelit Ph.D, Wojciech J.
; APPLICANT: Mikulski, Stanislaw M.
; TITLE OF INVENTION: PHARMACEUTICAL FOR TREATING TUMORS IN HUMANS
; NUMBER OF SEQUENCES: 1
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Mark H. Jay, P.C.
; STREET: P.O. Box 020083, General Post Office
; CITY: Brooklyn
; STATE: New York
; COUNTRY: USA
; ZIP: 11202-0002

COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patent In Release #1.24
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/283,971
FILING DATE:

CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/921,180
FILING DATE: 30-JUL-1992
APPLICATION NUMBER: US 07/178,118
FILING DATE: 06-APR-1988
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/436,141
FILING DATE: 13-NOV-1989

ATTORNEY/AGENT INFORMATION:
NAME: Jay, Mark H.
REGISTRATION NUMBER: 27507
REFERENCE/DOCKET NUMBER: 5006 US
TELEPHONE: 718-625-0399
TELEFAX: 718-625-0399
TELEX: No. 5529775 Applicable

INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 104 amino acids
TYPE: amino acid
STRANDEDNESS: single
TOPOLOGY: linear
MOLECULE TYPE: protein
HYPOTHETICAL: N

ANTI-SENSE: N
FRAGMENT TYPE: N-terminal
ORIGINAL SOURCE:
ORGANISM: Rana pipiens
DEVELOPMENTAL STAGE: Embryo

Query Match 95.5%; Score 551; DB 1; Length 104;

Best Local Similarity 96.1%; Pred. No. 1.1e-59;
Matches 99; Conservative 2; Mismatches 2; Indels 0; Gaps 0;

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DB 2 DMLTFQKKHLTNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 61

QY 62 EFYLSDCNVTSRPCCKYKLLKSTNTFCVTENQAPVHFVGVC 104
DB 62 EFYLSDCNVTSRPCCKYKLLKSTNTFCVTENQAPVHFVGVC 104

RESULT 10

US-07-921-619-1
; Sequence 1, Application US/07921619
; Patent No. 5595734
; GENERAL INFORMATION:
; APPLICANT: Ardelit Ph.D, Wojciech J.
; APPLICANT: Mikulski, Stanislaw M.
; TITLE OF INVENTION: PHARMACEUTICAL FOR TREATING TUMORS IN HUMANS
; NUMBER OF SEQUENCES: 1
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Mark H. Jay, P.C.
; STREET: P.O. Box 020083, General Post Office
; CITY: Brooklyn
; STATE: New York
; COUNTRY: USA
; ZIP: 11202-0002

COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patent In Release #1.24
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/921,619
FILING DATE: 19920728

CLASSIFICATION: 530
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/178,118
FILING DATE: 06-APR-1988
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/436,141
FILING DATE: 13-NOV-1989

ATTORNEY/AGENT INFORMATION:
NAME: Jay, Mark H.
REGISTRATION NUMBER: 27507
REFERENCE/DOCKET NUMBER: 5005 US
TELEPHONE: 718-625-0399
TELEFAX: 718-625-0399
TELEX: No. 5595734 Applicable

INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 104 amino acids
TYPE: AMINO ACID
STRANDEDNESS: single
TOPOLOGY: linear
MOLECULE TYPE: protein
HYPOTHETICAL: N

ANTI-SENSE: N
FRAGMENT TYPE: N-terminal
ORIGINAL SOURCE:
ORGANISM: Rana pipiens
DEVELOPMENTAL STAGE: Embryo

Query Match 95.5%; Score 551; DB 1; Length 104;

Best Local Similarity 96.1%; Pred. No. 1.1e-59;
Matches 99; Conservative 2; Mismatches 2; Indels 0; Gaps 0;

QY 2 DMLTFQKKHLTNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 61
DB 2 DMLTFQKKHLTNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 61

Q7 62 EFYISDCNVTSPRCCKYKLIKSTNTFCVTCENQAPVHFVGVGHC 104
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RESULT 11
 US-08-467-955-1
 ; Sequence 1, Application US/08467955
 ; Patent No. 5728805
 ; GENERAL INFORMATION:
 ; APPLICANT: Ardelt Ph.D. Wojciech J.
 ; TITLE OF INVENTION: PHARMACEUTICALS AND METHOD FOR MAKING THEM
 ; NUMBER OF SEQUENCES: 2
 ; CORRESPONDENCE ADDRESS:
 ; ADDRESSEE: Mark H. Jay, P.A.
 ; STREET: P.O. Box E
 ; CITY: Short Hills
 ; STATE: New Jersey
 ; COUNTRY: USA
 ; ZIP: 07078-0383
 ; COMPUTER READABLE FORM:
 ; MEDIUM TYPE: Floppy disk
 ; COMPUTER: IBM PC compatible
 ; OPERATING SYSTEM: PC-DOS/MS-DOS
 ; SOFTWARE: PatentIn Release #1.24
 ; CURRENT APPLICATION DATA:
 ; APPLICATION NUMBER: US/08/467,955
 ; FILING DATE:
 ; CLASSIFICATION: 435
 ; PRIOR APPLICATION DATA:
 ; APPLICATION NUMBER: US 07/178,118
 ; FILING DATE: 06-APR-1988
 ; PRIOR APPLICATION DATA:
 ; APPLICATION NUMBER: US 07/436,141
 ; FILING DATE: 13-NOV-1989
 ; PRIOR APPLICATION DATA:
 ; APPLICATION NUMBER: US 07/814,332
 ; FILING DATE: 03-FEB-1992
 ; PRIOR APPLICATION DATA:
 ; APPLICATION NUMBER: US 08/283,970
 ; FILING DATE: 01-AUG-1994
 ; ATTORNEY/AGENT INFORMATION:
 ; NAME: Jay, Mark H.
 ; REGISTRATION NUMBER: 27507
 ; REFERENCE/DOCKET NUMBER: 5007 US
 ; TELECOMMUNICATION INFORMATION:
 ; TELEPHONE: 201-912-9066
 ; TELEFAX: 201-912-0442
 ; TELEX: No. 5728805 Applicable
 ; INFORMATION FOR SEQ ID NO: 1:
 ; SEQUENCE CHARACTERISTICS:
 ; LENGTH: 104 amino acids
 ; TYPE: amino acid
 ; STRANDEDNESS: single
 ; TOPOLOGY: linear
 ; MOLECULE TYPE: protein
 ; HYPOTHETICAL: N
 ; ANTI-SENSE: N
 ; FRAGMENT TYPE: N-terminal
 ; ORIGINAL SOURCE:
 ; ORGANISM: Rana pipiens
 ; DEVELOPMENTAL STAGE: Oocyte
 US-08-467-955-1

	Query Match	95.5%;	Score 551;	DB 1;	Length 104;
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db	2 DWTFOKKHLNTRDVEDCNNIMSTNFHCKDKNTFYSRPEPKVAKCGIIASKNVLTTTS				61

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QY      62  EFYLSDCNVTSPRCYKYLKKSNTFCVTCENQAPVHFVGVGHC 104
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Db      62  EFYLSDCNVTSPRCYKYLKKSNTKFCVTCENQAPVHFVGVGSC 104

RESULT 12
US-08-891-848-13
; Sequence 13, Application US/08891848
; Patent No. 5955073
; GENERAL INFORMATION:
; APPLICANT: Rybak, Susanna M.
; APPLICANT: Youle, Richard J.
; APPLICANT: Newton, Dianne L.
; APPLICANT: Nicholls, Peter J.
; TITLE OF INVENTION: Selective RNase Cytotoxic Reagents
; NUMBER OF SEQUENCES: 19
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Townsend and Townsend and Crew LLP
; STREET: Two Embarcadero Center, Eighth Floor
; CITY: San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94111-3834
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patentin Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/891,848
; FILING DATE: No. 5955073 yet assigned
; CLASSIFICATION: 530
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 08/125,462
; FILING DATE: 22-SEP-1993
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 08/014,082
; FILING DATE: 04-FEB-1993
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 07/779,195
; FILING DATE: 22-OCT-1991
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 07/510,696
; FILING DATE: 20-APR-1990
; ATTORNEY/AGENT INFORMATION:
; NAME: Weber, Ellen Lauver
; REGISTRATION NUMBER: 32,762
; REFERENCE/DOCKET NUMBER: 015280-110310US
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (415) 576-0200
; TELEFAX: (415) 576-0300
; INFORMATION FOR SEQ ID NO: 13:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 104 amino acids
; TYPE: amino acid
; STRANDEDNESS:
; TOPOLOGY: linear
; MOLECULE TYPE: protein
; FEATURE:
; NAME/KEY: Protein
; LOCATION: 1..104
; OTHER INFORMATION: /label= Onc
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; US-08-891-848-13

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QY 62 EFYLSDCNVTSPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 104
Db 62 EFYLSDCNVTSPCKYKLLKSTNKFCVTCENQAPVHFVGVGSC 104

RESULT 13
US-08-875-811-1
; Sequence 1, Application US/08875811
; Patent No. 6045793
; GENERAL INFORMATION:
; APPLICANT: Rybak, Susanna M.
; APPLICANT: Newton, Dianne L.
; APPLICANT: Boque, Illuis
; APPLICANT: Wlodawer, Alexander
; TITLE OF INVENTION: Recombinant Ribonuclease Proteins
; NUMBER OF SEQUENCES: 64
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Townsend and Townsend and Crew LLP
; STREET: Two Embarcadero Center, Eighth Floor
; CITY: San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94111-3834
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/875,811
; FILING DATE: 19-FEB-1998
; CLASSIFICATION: 435
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: WO PCT/US97/02588
; FILING DATE: 19-FEB-1997
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 60/011,800
; FILING DATE: 21-FEB-1996
; ATTORNEY/AGENT INFORMATION:
; NAME: Faris, Susan K.
; REGISTRATION NUMBER: 41,739
; REFERENCE/DOCKET NUMBER: 015280-244100US
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (415) 576-0200
; TELEFAX: (415) 576-0300
; INFORMATION FOR SEQ ID NO: 1:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 104 amino acids
; TYPE: amino acid
; STRANDEDNESS:
; TOPOLOGY: linear
; MOLECULE TYPE: protein
; FEATURE:
; NAME/KEY: Protein
; LOCATION: 1..104
; OTHER INFORMATION: /label= nOnc
; OTHER INFORMATION: /note= "native ONCONASE (Registered
; OTHER INFORMATION: Trademark) from Rana pipiens"
; FEATURE:
; NAME/KEY: Modified-site
; LOCATION: 1
; OTHER INFORMATION: /note= "Xaa = pyroglutamic acid"
US-08-875-811-1

Query Match 95.5%; Score 551; DB 3; Length 104;
Best Local Similarity 96.1%; Pred. No. 1.1e-59;
Matches 99; Conservative 2; Mismatches 2; Indels 0; Gaps 0;
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Db 2 DMLTFQKKHLTNRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTTTS 61
QY 62 EFYLSDCNVTSPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 104

Db 62 EFYLSDCNVTSPCKYKLLKSTNKFCVTCENQAPVHFVGVGSC 104

RESULT 14
US-09-394-268-1
; Sequence 1, Application US/09394268
; Patent No. 6175003
; GENERAL INFORMATION:
; APPLICANT: Saxena, Shailendra K
; TITLE OF INVENTION: NUCLEIC ACIDS ENCODING RIBONUCLEASES AND METHODS OF
; MAKING THEM
; FILE REFERENCE: 5013
; CURRENT APPLICATION NUMBER: US/09/394,268
; CURRENT FILING DATE: 1999-09-10
; NUMBER OF SEQ ID NOS: 8
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 1
; LENGTH: 104
; TYPE: PRT
; ORGANISM: Rana pipiens
US-09-394-268-1
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Best Local Similarity 96.1%; Pred. No. 1.1e-59;
Matches 99; Conservative 2; Mismatches 2; Indels 0; Gaps 0;
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Db 2 DMLTFQKKHLTNRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTTTS 61
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Db 62 EFYLSDCNVTSPCKYKLLKSTNKFCVTCENQAPVHFVGVGSC 104

RESULT 15
US-09-071-672-1
; Sequence 1, Application US/09071672
; Patent No. 6395276
; GENERAL INFORMATION:
; APPLICANT: Rybak, Susanna M.
; APPLICANT: Newton, Dianne L.
; APPLICANT: Goldenberg, David M.
; TITLE OF INVENTION: Immunotoxins Directed Against Malignant
; TITLES OF INVENTION: Cells
; NUMBER OF SEQUENCES: 3
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Townsend and Townsend and Crew LLP
; STREET: Two Embarcadero Center, Eighth Floor
; CITY: San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94111-3834
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/09/071,672
; FILING DATE: 01-MAY-1998
; CLASSIFICATION: 424
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 60/046,895
; FILING DATE: 02-MAY-1997
; ATTORNEY/AGENT INFORMATION:
; NAME: Weber, Eileen Lauver
; REGISTRATION NUMBER: 32,762
; REFERENCE/DOCKET NUMBER: 015280-32510US
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (415) 576-0200
; TELEFAX: (415) 576-0300

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; INFORMATION FOR SEQ ID NO: 1:
; SEQUENCE CHARACTERISTICS:
;   LENGTH: 104 amino acids
;   TYPE: amino acid
;   STRANDEDNESS:
;   TOPOLOGY: linear
; MOLECULE TYPE: protein
; FEATURE:
;   NAME/KEY: Modified-site
;   LOCATION: 1
;   OTHER INFORMATION: /product= "OTHER"
;   OTHER INFORMATION: /note= "Xaa = Glu or pyroglutamic acid"
; FEATURE:
;   NAME/KEY: Protein
;   LOCATION: 1..104
;   OTHER INFORMATION: /note= "RNase A derived from
;   OTHER INFORMATION: Rana pipiens, "onc protein"
US-09-071-672-1

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Query Match          95.5%; Score 551; DB 4; Length 104;
Best Local Similarity 96.1%; Pred. No. 1.1e-59;
Matches 99; Conservative 2; Mismatches 2; Indels 0; Gaps 0;

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QY      62 EFLSDCNVTSRPCKYKLLKKSTNTFCVTCENQAPVHFVGVGHC 104
Db      62 EFLSDCNVTSRPCKYKLLKKSTNTFCVTCENQAPVHFVGVGSC 104

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Search completed: May 7, 2004, 21:40:44
Job time : 12.0636 secs

GenCore version 5.1.6
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OM protein - protein search, using sw model

Run on: May 7, 2004, 21:29:40 ; Search time 33.3695 Seconds
(without alignments)

865.070 Million cell updates/sec

Title: US-09-961-400-11

Perfect score: 577

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Total number of hits satisfying chosen parameters: 1140673

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

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Published Applications AA:*
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

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6	573	99.3	105	10	US-09-948-391A-6
7	573	99.3	105	10	US-09-961-400-6
8	573	99.3	127	10	US-09-948-391A-28
9	573	99.3	127	10	US-09-961-400-28
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17	551	95.5	104	9	US-09-986-119-1	Sequence 1, Appli
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19	551	95.5	105	14	US-10-153-882-2	Sequence 2, Appli
20	543	94.1	104	12	US-10-461-713-53	Sequence 53, Appli
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26	280.5	48.6	111	10	US-09-961-400-26	Sequence 26, Appli
27	276.5	47.9	110	10	US-09-948-391A-15	Sequence 15, Appli
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29	276.5	47.9	111	10	US-09-961-400-17	Sequence 17, Appli
30	272.5	47.2	110	10	US-09-961-400-19	Sequence 19, Appli
31	272.5	47.2	111	10	US-09-948-391A-21	Sequence 21, Appli
32	272.5	47.2	111	10	US-09-961-400-21	Sequence 21, Appli
33	272.5	47.2	117	10	US-09-948-391A-22	Sequence 22, Appli
34	272.5	47.2	117	10	US-09-961-400-22	Sequence 22, Appli
35	270.5	46.9	111	10	US-09-948-391A-17	Sequence 17, Appli
36	266.5	46.2	110	10	US-09-948-391A-19	Sequence 19, Appli
37	157.5	27.3	169	13	US-10-016-447-2	Sequence 2, Appli
38	144	25.0	119	12	US-10-016-248-89	Sequence 89, Appli
39	144	25.0	119	15	US-10-074-978A-139	Sequence 139, App
40	128.5	22.3	124	13	US-10-016-447-5	Sequence 5, Appli
41	125	21.7	124	12	US-10-037-417-103	Sequence 103, App
42	113	19.6	147	9	US-09-286-240-6	Sequence 6, Appli
43	113	19.6	147	9	US-09-863-777-2	Sequence 2, Appli
44	113	19.6	147	9	US-09-731-872-254	Sequence 254, App
45	113	19.6	147	10	US-09-876-997-254	Sequence 254, App

ALIGNMENTS

RESULT 1

US-09-948-391A-11
; Sequence 11, Application US/09948391A
; Publication No. US20030027311A1
; GENERAL INFORMATION:
; APPLICANT: Rybak, Susanna M.
; APPLICANT: Newton, Dianne L.
; APPLICANT: The United States of America
; APPLICANT: as represented by The Secretary of the
; APPLICANT: Department of Health and Human Services
; TITLE OF INVENTION: Recombinant Anti-Tumor RNase
; FILE REFERENCE: 015280-343110US
; CURRENT APPLICATION NUMBER: US/09/948,391A
; CURRENT FILING DATE: 2002-05-10
; PRIOR APPLICATION NUMBER: US 60/079,751
; PRIOR FILING DATE: 1998-03-27
; PRIOR APPLICATION NUMBER: WO PCT/US99/06641
; PRIOR FILING DATE: 1999-03-26
; PRIOR APPLICATION NUMBER: US 09/622,613
; PRIOR FILING DATE: 2000-08-17
; NUMBER OF SEQ ID NOS: 43
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 11
; LENGTH: 104
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence:Rana pipiens
; OTHER INFORMATION: ribonuclease with Gln1Ser substitution
; OTHER INFORMATION: (recombinant RaPLR1 Q1S)
US-09-948-391A-11

Query Match 100.0%; Score 577; DB 10; Length 104;
Best Local Similarity 100.0%; Pred. No. 1.3e-58;
Matches 104; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY

1 SDWLTFQKKHLTNRDVCNNTMSNLFCKDKNTFLYSRPEPVKAI CKGIATSKNVLTT 60
|||||

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Db 1 SDWLTFQKKHLINTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 60
QY 61 SEFYSDCNVTSRCPCKYKLLKSKTNTFCVTCENQAPVHFVGVGHC 104
Db 61 SEFYSDCNVTSRCPCKYKLLKSKTNTFCVTCENQAPVHFVGVGHC 104

RESULT 2
US-09-961-400-11
; Sequence 11, Application US/09961400
; Publication No. US20030124131A1
; GENERAL INFORMATION:
; APPLICANT: RYBAK, SUSANNA M.
; APPLICANT: GOLDENBERG, DAVID M.
; APPLICANT: NEWTON, DIANNE L.
; TITLE OF INVENTION: IMMUNOCONJUGATES OF TOXINS DIRECTED AGAINST MALIGNANT
; TITLE OF INVENTION: CELLS
; FILE REFERENCE: 018733/1059
; CURRENT APPLICATION NUMBER: US/09/961,400
; CURRENT FILING DATE: 2001-09-25
; PRIOR APPLICATION NUMBER: 09/622,613
; PRIOR FILING DATE: 2000-08-17
; PRIOR APPLICATION NUMBER: PCT/US99/06641
; PRIOR FILING DATE: 1999-03-26
; PRIOR APPLICATION NUMBER: 60/079,751
; PRIOR FILING DATE: 1998-03-26
; NUMBER OF SEQ ID NOS: 43
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 11
; LENGTH: 104
; TYPE: PRT
; ORGANISM: Rana pipiens
US-09-961-400-11

Query Match 100.0%; Score 577; DB 10; Length 104;
Best Local Similarity 100.0%; Pred. No. 1.3e-58;
Matches 104; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 SDWLTFQKKHLINTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 60
Db 1 SDWLTFQKKHLINTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 60
QY 61 SEFYSDCNVTSRCPCKYKLLKSKTNTFCVTCENQAPVHFVGVGHC 104
Db 61 SEFYSDCNVTSRCPCKYKLLKSKTNTFCVTCENQAPVHFVGVGHC 104

RESULT 3
US-09-948-391A-13
; Sequence 13, Application US/09948391A
; Publication No. US20030027311A1
; GENERAL INFORMATION:
; APPLICANT: Rybak, Susanna M.
; APPLICANT: Newton, Dianne L.
; APPLICANT: The United States of America
; APPLICANT: as represented by The Secretary of the
; APPLICANT: Department of Health and Human Services
; TITLE OF INVENTION: Recombinant Anti-Tumor RNase
; FILE REFERENCE: 015280-343110US
; CURRENT APPLICATION NUMBER: US/09/948,391A
; CURRENT FILING DATE: 2002-05-10
; PRIOR APPLICATION NUMBER: US 60/079,751
; PRIOR FILING DATE: 1998-03-27
; PRIOR APPLICATION NUMBER: WO PCT/US99/06641
; PRIOR FILING DATE: 1999-03-26
; PRIOR APPLICATION NUMBER: US 09/622,613
; PRIOR FILING DATE: 2000-08-17
; NUMBER OF SEQ ID NOS: 43
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 13
; LENGTH: 105
; TYPE: PRT
; ORGANISM: Artificial Sequence
```

```
; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence: Rana pipiens
; OTHER INFORMATION: ribonuclease with Met at position 1 and Gln2Ser
; OTHER INFORMATION: substitution (recombinant Met (-1) RapLr1 Q1S)
US-09-948-391A-13

Query Match 100.0%; Score 577; DB 10; Length 105;
Best Local Similarity 100.0%; Pred. No. 1.3e-58;
Matches 104; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 SDWLTFQKKHLINTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 60
Db 2 SDWLTFQKKHLINTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 61
QY 61 SEFYSDCNVTSRCPCKYKLLKSKTNTFCVTCENQAPVHFVGVGHC 104
Db 62 SEFYSDCNVTSRCPCKYKLLKSKTNTFCVTCENQAPVHFVGVGHC 105

RESULT 4
US-09-961-400-13
; Sequence 13, Application US/09961400
; Publication No. US20030124131A1
; GENERAL INFORMATION:
; APPLICANT: RYBAK, SUSANNA M.
; APPLICANT: GOLDENBERG, DAVID M.
; APPLICANT: NEWTON, DIANNE L.
; TITLE OF INVENTION: IMMUNOCONJUGATES OF TOXINS DIRECTED AGAINST MALIGNANT
; TITLE OF INVENTION: CELLS
; FILE REFERENCE: 018733/1059
; CURRENT APPLICATION NUMBER: US/09/961,400
; CURRENT FILING DATE: 2001-09-25
; PRIOR APPLICATION NUMBER: 09/622,613
; PRIOR FILING DATE: 2000-08-17
; PRIOR APPLICATION NUMBER: PCT/US99/06641
; PRIOR FILING DATE: 1999-03-26
; PRIOR APPLICATION NUMBER: 60/079,751
; PRIOR FILING DATE: 1998-03-26
; NUMBER OF SEQ ID NOS: 43
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 13
; LENGTH: 105
; TYPE: PRT
; ORGANISM: Rana pipiens
US-09-961-400-13

Query Match 100.0%; Score 577; DB 10; Length 105;
Best Local Similarity 100.0%; Pred. No. 1.3e-58;
Matches 104; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 SDWLTFQKKHLINTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 60
Db 2 SDWLTFQKKHLINTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIASKNVLT 61
QY 61 SEFYSDCNVTSRCPCKYKLLKSKTNTFCVTCENQAPVHFVGVGHC 104
Db 62 SEFYSDCNVTSRCPCKYKLLKSKTNTFCVTCENQAPVHFVGVGHC 105

RESULT 5
US-09-961-400-2
; Sequence 2, Application US/09961400
; Publication No. US20030124131A1
; GENERAL INFORMATION:
; APPLICANT: RYBAK, SUSANNA M.
; APPLICANT: GOLDENBERG, DAVID M.
; APPLICANT: NEWTON, DIANNE L.
; TITLE OF INVENTION: IMMUNOCONJUGATES OF TOXINS DIRECTED AGAINST MALIGNANT
; TITLE OF INVENTION: CELLS
; FILE REFERENCE: 018733/1059
; CURRENT APPLICATION NUMBER: US/09/961,400
; CURRENT FILING DATE: 2001-09-25
; PRIOR APPLICATION NUMBER: 09/622,613
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; PRIOR FILING DATE: 2000-08-17
; PRIOR APPLICATION NUMBER: PCT/US99/06641
; PRIOR FILING DATE: 1999-03-26
; PRIOR APPLICATION NUMBER: 60/079,751
; PRIOR FILING DATE: 1998-03-26
; NUMBER OF SEQ ID NOS: 43
; SOFTWARE: Patent In Ver. 2.1
; SEQ ID NO 2
; LENGTH: 104
; TYPE: PRT
; ORGANISM: Rana pipiens
US-09-961-400-2

Query Match      99.3%; Score 573; DB 10; Length 104;
Best Local Similarity 100.0%; Pred. No. 3.8e-58;
Matches 103; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 2 DDLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 61
Db 2 DDLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 61

Qy 62 EFYLSDCNVTSPCKYKXKSTNTFCVTCENQAPVHFVGVGHC 104
Db 62 EFYLSDCNVTSPCKYKXKSTNTFCVTCENQAPVHFVGVGHC 104

RESULT 6
US-09-948-391A-6
; Sequence 6, Application US/09948391A
; Publication No. US20030027311A1
; GENERAL INFORMATION:
; APPLICANT: Rybak, Susanna M.
; APPLICANT: Newton, Dianne L.
; APPLICANT: as represented by The Secretary of the
; APPLICANT: Department of Health and Human Services
; TITLE OF INVENTION: Recombinant Anti-Tumor RNase
; FILE REFERENCE: 015280-343110US
; CURRENT APPLICATION NUMBER: US/09/948,391A
; CURRENT FILING DATE: 2002-05-10
; PRIOR APPLICATION NUMBER: US 60/079,751
; PRIOR FILING DATE: 1998-03-27
; PRIOR FILING DATE: 1998-03-27
; PRIOR APPLICATION NUMBER: WO PCT/US99/06641
; PRIOR FILING DATE: 1999-03-26
; PRIOR APPLICATION NUMBER: US 09/622,613
; PRIOR FILING DATE: 2000-08-17
; NUMBER OF SEQ ID NOS: 43
; SOFTWARE: Patent In Ver. 2.0
; SEQ ID NO 6
; LENGTH: 105
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence: Rana pipiens
; OTHER INFORMATION: ribonuclease with Met at position 1 (recombinant)
; OTHER INFORMATION: Met(-1) RapLR1
US-09-948-391A-6

Query Match      99.3%; Score 573; DB 10; Length 105;
Best Local Similarity 100.0%; Pred. No. 3.8e-58;
Matches 103; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 2 DDLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 61
Db 3 DDLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 62

Qy 62 EFYLSDCNVTSPCKYKXKSTNTFCVTCENQAPVHFVGVGHC 104
Db 63 EFYLSDCNVTSPCKYKXKSTNTFCVTCENQAPVHFVGVGHC 105

RESULT 7
US-09-961-400-6
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; Sequence 6, Application US/09961400
; Publication No. US20030124131A1
; GENERAL INFORMATION:
; APPLICANT: RYBAK, SUSANNA M.
; APPLICANT: GOLDENBERG, DAVID M.
; APPLICANT: NEWTON, DIANNE L.
; TITLE OF INVENTION: IMMUNOCONJUGATES OF TOXINS DIRECTED AGAINST MALIGNANT
; TITLE OF INVENTION: CELLS
; FILE REFERENCE: 018733/1059
; CURRENT APPLICATION NUMBER: US/09/961,400
; CURRENT FILING DATE: 2001-09-25
; PRIOR APPLICATION NUMBER: 09/622,613
; PRIOR FILING DATE: 2000-08-17
; PRIOR APPLICATION NUMBER: PCT/US99/06641
; PRIOR FILING DATE: 1999-03-26
; PRIOR APPLICATION NUMBER: 60/079,751
; PRIOR FILING DATE: 1998-03-26
; NUMBER OF SEQ ID NOS: 43
; SOFTWARE: Patent In Ver. 2.1
; SEQ ID NO 6
; LENGTH: 105
; TYPE: PRT
; ORGANISM: Rana pipiens
US-09-961-400-6

Query Match      99.3%; Score 573; DB 10; Length 105;
Best Local Similarity 100.0%; Pred. No. 3.8e-58;
Matches 103; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 2 DDLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 61
Db 3 DDLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTT 62

Qy 62 EFYLSDCNVTSPCKYKXKSTNTFCVTCENQAPVHFVGVGHC 104
Db 63 EFYLSDCNVTSPCKYKXKSTNTFCVTCENQAPVHFVGVGHC 105

RESULT 8
US-09-948-391A-28
; Sequence 28, Application US/09948391A
; Publication No. US20030027311A1
; GENERAL INFORMATION:
; APPLICANT: Rybak, Susanna M.
; APPLICANT: Newton, Dianne L.
; APPLICANT: The United States of America
; APPLICANT: as represented by The Secretary of the
; APPLICANT: Department of Health and Human Services
; TITLE OF INVENTION: Recombinant Anti-Tumor RNase
; FILE REFERENCE: 015280-343110US
; CURRENT APPLICATION NUMBER: US/09/948,391A
; CURRENT FILING DATE: 2002-05-10
; PRIOR APPLICATION NUMBER: US 60/079,751
; PRIOR FILING DATE: 1998-03-27
; PRIOR APPLICATION NUMBER: WO PCT/US99/06641
; PRIOR FILING DATE: 1999-03-26
; PRIOR APPLICATION NUMBER: US 09/622,613
; PRIOR FILING DATE: 2000-08-17
; NUMBER OF SEQ ID NOS: 43
; SOFTWARE: Patent In Ver. 2.0
; SEQ ID NO 28
; LENGTH: 127
; TYPE: PRT
; ORGANISM: Rana pipiens
; FEATURE:
; OTHER INFORMATION: Rana pipiens ribonuclease (RapLR1) Clone 5a1b cDNA
; OTHER INFORMATION: Insert
US-09-948-391A-28

Query Match      99.3%; Score 573; DB 10; Length 127;
Best Local Similarity 100.0%; Pred. No. 4.8e-58;
Matches 103; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
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QY 2 DMLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTTTS 61
Db |||||
25 DMLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTTTS 84
QY 62 EFYLSDCNVTSRPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 104
Db |||||
85 EFYLSDCNVTSRPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 127

RESULT 9

US-09-961-400-28
; Sequence 28, Application US/09961400
; Publication No. US20030124131A1
; GENERAL INFORMATION:
; APPLICANT: RYBAK, SUSANNA M.
; APPLICANT: GOLDENBERG, DAVID M.
; APPLICANT: NEWTON, DIANNE L.
; TITLE OF INVENTION: IMMUNOCONJUGATES OF TOXINS DIRECTED AGAINST MALIGNANT
; TITLE OF INVENTION: CELLS
; FILE REFERENCE: 018733/1059
; CURRENT APPLICATION NUMBER: US/09/961,400
; PRIOR FILING DATE: 2003-09-25
; PRIOR FILING DATE: 09/622,613
; PRIOR FILING DATE: 2000-08-17
; PRIOR APPLICATION NUMBER: PCT/US99/06641
; PRIOR FILING DATE: 1999-03-26
; PRIOR APPLICATION NUMBER: 60/079,751
; PRIOR FILING DATE: 1998-03-26
; NUMBER OF SEQ ID NOS: 43
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 28
; LENGTH: 127
; TYPE: PRT
; ORGANISM: Rana pipiens
US-09-961-400-28

Query Match 99.3%; Score 573; DB 10; Length 127;
Best Local Similarity 100.0%; Pred. No. 4.8e-58;
Matches 103; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 2 DMLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTTTS 61
Db |||||
25 DMLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTTTS 84
QY 62 EFYLSDCNVTSRPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 104
Db |||||
85 EFYLSDCNVTSRPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 127

RESULT 10

US-09-961-400-9
; Sequence 9, Application US/09961400
; Publication No. US20030124131A1
; GENERAL INFORMATION:
; APPLICANT: RYBAK, SUSANNA M.
; APPLICANT: GOLDENBERG, DAVID M.
; APPLICANT: NEWTON, DIANNE L.
; TITLE OF INVENTION: IMMUNOCONJUGATES OF TOXINS DIRECTED AGAINST MALIGNANT
; TITLE OF INVENTION: CELLS
; FILE REFERENCE: 018733/1059
; CURRENT APPLICATION NUMBER: US/09/961,400
; PRIOR FILING DATE: 2001-09-25
; PRIOR APPLICATION NUMBER: 09/622,613
; PRIOR FILING DATE: 2000-08-17
; PRIOR APPLICATION NUMBER: PCT/US99/06641
; PRIOR FILING DATE: 1999-03-26
; PRIOR APPLICATION NUMBER: 60/079,751
; PRIOR FILING DATE: 1998-03-26
; NUMBER OF SEQ ID NOS: 43
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 9
; LENGTH: 111
; TYPE: PRT

; ORGANISM: Rana pipiens
US-09-961-400-9

Query Match 98.8%; Score 570; DB 10; Length 111;
Best Local Similarity 99.0%; Pred. No. 9e-58;
Matches 102; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

QY 2 DMLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTTTS 61
Db |||||
9 DMLTFQKKHLNTRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTTTS 68
QY 62 EFYLSDCNVTSRPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 104
Db |||||
69 EFYLSDCNVTSRPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 111

RESULT 11

US-09-948-391A-2
; Sequence 2, Application US/09948391A
; Publication No. US20030027311A1
; GENERAL INFORMATION:
; APPLICANT: Rybak, Susanna M.
; APPLICANT: Newton, Dianne L.
; APPLICANT: as represented by The Secretary of America
; APPLICANT: as represented by The Secretary of the
; APPLICANT: Department of Health and Human Services
; TITLE OF INVENTION: Recombinant Anti-Tumor RNase
; FILE REFERENCE: 015280-343110US
; CURRENT APPLICATION NUMBER: US/09/948,391A
; CURRENT FILING DATE: 2002-05-10
; PRIOR APPLICATION NUMBER: US 60/079,751
; PRIOR FILING DATE: 1998-03-27
; PRIOR APPLICATION NUMBER: WO PCT/US99/06641
; PRIOR FILING DATE: 1999-03-26
; PRIOR APPLICATION NUMBER: US 09/622,613
; PRIOR FILING DATE: 2000-08-17
; NUMBER OF SEQ ID NOS: 43
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 2
; LENGTH: 104
; TYPE: PRT
; ORGANISM: Rana pipiens
; FEATURE:
; OTHER INFORMATION: ribonuclease (RaPLR1)
US-09-948-391A-2

Query Match 97.7%; Score 564; DB 10; Length 104;
Best Local Similarity 99.0%; Pred. No. 4.1e-57;
Matches 102; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 2 DMLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTTTS 61
Db |||||
2 DMLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTTTS 61
QY 62 EFYLSDCNVTSRPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 104
Db |||||
62 EFYLSDCNVTSRPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 104

RESULT 12

US-09-948-391A-4
; Sequence 4, Application US/09948391A
; Publication No. US20030027311A1
; GENERAL INFORMATION:
; APPLICANT: Rybak, Susanna M.
; APPLICANT: Newton, Dianne L.
; APPLICANT: as represented by The Secretary of America
; APPLICANT: as represented by The Secretary of the
; APPLICANT: Department of Health and Human Services
; TITLE OF INVENTION: Recombinant Anti-Tumor RNase
; FILE REFERENCE: 015280-343110US
; CURRENT APPLICATION NUMBER: US/09/948,391A
; CURRENT FILING DATE: 2002-05-10

; PRIOR APPLICATION NUMBER: US 60/079,751
; PRIOR FILING DATE: 1998-03-27
; PRIOR APPLICATION NUMBER: WO PCT/US99/06641
; PRIOR FILING DATE: 1999-03-26
; PRIOR APPLICATION NUMBER: US 09/622,613
; PRIOR FILING DATE: 2000-08-17
; NUMBER OF SEQ ID NOS: 43
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 4
; LENGTH: 104
; TYPE: PRT
; ORGANISM: Artificial Sequence

; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence:Rana pipiens
; OTHER INFORMATION: ribonuclease with Met23Leu substitution
; OTHER INFORMATION: (recombinant RaPLR1 Met23Leu)

US-09-948-391A-4

Query Match 97.7%; Score 564; DB 10; Length 104;
Best Local Similarity 98.1%; Pred. No. 4.1e-57;
Matches 101; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 2 DDLTFQKKHLNTRDVCNINMSTNLFHCKDKNTFIYSRPPVKAICKGIASKNVLTTS 61
Db 2 DDLTFQKKHLNTRDVCNINMSTNLFHCKDKNTFIYSRPPVKAICKGIASKNVLTTF 61
QY 62 EFYLSDCNVTSPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 104
Db 62 EFYLSDCNVTSPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 104

RESULT 13

US-09-961-400-4
; Sequence 4, Application US/09961400
; Publication No. US20030124131A1
; GENERAL INFORMATION:

; APPLICANT: RYBAK, SUSANNA M.
; APPLICANT: NEWTON, DIANNE L.
; TITLE OF INVENTION: IMMUNOCONJUGATES OF TOXINS DIRECTED AGAINST MALIGNANT

; TITLE OF INVENTION: CELLS
; FILE REFERENCE: 018733/1059
; CURRENT APPLICATION NUMBER: US/09/961,400
; CURRENT FILING DATE: 2001-09-25
; PRIOR APPLICATION NUMBER: 09/622,613
; PRIOR FILING DATE: 2000-08-17
; PRIOR APPLICATION NUMBER: PCT/US99/06641
; PRIOR FILING DATE: 1999-03-26
; PRIOR APPLICATION NUMBER: 60/079,751
; PRIOR FILING DATE: 1998-03-26
; NUMBER OF SEQ ID NOS: 43
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 4
; LENGTH: 104
; TYPE: PRT
; ORGANISM: Rana pipiens

US-09-961-400-4

Query Match 97.7%; Score 564; DB 10; Length 104;
Best Local Similarity 98.1%; Pred. No. 4.1e-57;
Matches 101; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 2 DDLTFQKKHLNTRDVCNINMSTNLFHCKDKNTFIYSRPPVKAICKGIASKNVLTTS 61
Db 2 DDLTFQKKHLNTRDVCNINMSTNLFHCKDKNTFIYSRPPVKAICKGIASKNVLTTF 61
QY 62 EFYLSDCNVTSPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 104
Db 62 EFYLSDCNVTSPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 104

RESULT 14

US-09-961-400-8

; Sequence 8, Application US/09961400
; Publication No. US20030124131A1
; GENERAL INFORMATION:
; APPLICANT: RYBAK, SUSANNA M.
; APPLICANT: GOLDENBERG, DAVID M.
; APPLICANT: NEWTON, DIANNE L.
; TITLE OF INVENTION: IMMUNOCONJUGATES OF TOXINS DIRECTED AGAINST MALIGNANT
; TITLE OF INVENTION: CELLS
; FILE REFERENCE: 018733/1059
; CURRENT APPLICATION NUMBER: US/09/961,400
; CURRENT FILING DATE: 2001-09-25
; PRIOR APPLICATION NUMBER: 09/622,613
; PRIOR FILING DATE: 2000-08-17
; PRIOR APPLICATION NUMBER: PCT/US99/06641
; PRIOR FILING DATE: 1999-03-26
; PRIOR APPLICATION NUMBER: 60/079,751
; PRIOR FILING DATE: 1998-03-26
; NUMBER OF SEQ ID NOS: 43
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 8
; LENGTH: 105
; TYPE: PRT
; ORGANISM: Rana pipiens

US-09-961-400-8

Query Match 97.1%; Score 560; DB 10; Length 105;
Best Local Similarity 97.1%; Pred. No. 1.2e-56;
Matches 100; Conservative 1; Mismatches 2; Indels 0; Gaps 0;

QY 2 DDLTFQKKHLNTRDVCNINMSTNLFHCKDKNTFIYSRPPVKAICKGIASKNVLTTS 61
Db 3 DDLTFQKKHLNTRDVCNINMSTNLFHCKDKNTFIYSRPPVKAICKGIASKNVLTTF 62
QY 62 EFYLSDCNVTSPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 104
Db 63 EFYLSDCNVTSPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 105

RESULT 15

US-09-948-391A-8
; Sequence 8, Application US/09948391A
; Publication No. US20030027311A1
; GENERAL INFORMATION:

; APPLICANT: RYBAK, SUSANNA M.
; APPLICANT: The United States of America
; APPLICANT: as represented by The Secretary of the
; APPLICANT: Department of Health and Human Services
; TITLE OF INVENTION: Recombinant Anti-Tumor RNase
; FILE REFERENCE: 015280-343110US
; CURRENT APPLICATION NUMBER: US/09/948,391A
; CURRENT FILING DATE: 2002-05-10
; PRIOR APPLICATION NUMBER: US 60/079,751
; PRIOR FILING DATE: 1998-03-27
; PRIOR APPLICATION NUMBER: WO PCT/US99/06641
; PRIOR FILING DATE: 1999-03-26
; PRIOR APPLICATION NUMBER: US 09/622,613
; PRIOR FILING DATE: 2000-08-17
; NUMBER OF SEQ ID NOS: 43
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 8
; LENGTH: 105
; TYPE: PRT
; ORGANISM: Artificial Sequence

; FEATURE:

; OTHER INFORMATION: Description of Artificial Sequence:Rana pipiens
; OTHER INFORMATION: ribonuclease with Met at position 1 and Met24Leu
; OTHER INFORMATION: substitution (recombinant Met(-1) RaPLR1 Met23Leu)

US-09-948-391A-8

Query Match 96.2%; Score 555; DB 10; Length 105;
Best Local Similarity 97.1%; Pred. No. 4.5e-56;
Matches 100; Conservative 1; Mismatches 2; Indels 0; Gaps 0;

Qy	2	DWLTFOKKHLTNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTTS	61
Db	3	DWLTFOKKHLTNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTTF	62
Qy	62	EFYLSDCNVTSRPCKYKLLKKSNTFCVTCENQAPVHFVGVGHC	104
Db	63	EFYLSDCNVTSRPCKYKLLKKSNTFCVTCENQAPVHFVGVGHC	105

Search completed: May 7, 2004, 21:51:57
Job time : 34.3695 secs

Result No.	Score	Query		DB	ID	Description
		Match	Length			
1	551	95.5	104	2	A39035	ribonuclease-relat
2	287	49.7	111	2	A27121	ribonuclease-relat
3	280.5	48.6	111	1	JX0120	ribonuclease-relat
4	264.5	45.8	111	2	JX0085	pancreatic ribonuc
5	144	25.0	119	2	S41111	pancreatic ribonuc
6	132	22.9	124	1	NRUI	pancreatic ribonuc
7	128	22.2	125	1	A32474	angioegenin [valida
8	126	21.8	128	1	NRGU	pancreatic ribonuc
9	125	21.7	124	1	NRWHK	pancreatic ribonuc
10	120	20.8	128	1	NRKS	pancreatic ribonuc
11	120	20.8	128	1	NRGFB	pancreatic ribonuc
12	119.5	20.7	145	1	A35932	angioegenin precurs
13	118	20.5	124	1	NRCEB	pancreatic ribonuc
14	117	20.3	128	1	NRVY	pancreatic ribonuc
15	116	20.1	125	1	B43825	angioegenin - rabbi
16	114	19.8	124	1	NRHP	pancreatic ribonuc
17	113	19.6	147	1	NRHUAG	angioegenin precurs
18	112	19.4	124	1	NRBOB	pancreatic ribonuc
19	112	19.4	124	1	NRPG	pancreatic ribonuc
20	112	19.4	128	1	NRPQ	pancreatic ribonuc
21	112	19.4	150	1	NRBO	pancreatic ribonuc
22	111.5	19.3	147	2	IS2489	ribonuclease 4 (EC
23	111	19.2	124	2	S08549	ribonuclease - dom
24	111	19.2	128	1	NRHO	pancreatic ribonuc
25	111	19.2	167	2	S20066	pancreatic-type ri
26	110.5	19.2	123	1	A43825	angioegenin - pig
27	110.5	19.2	155	2	JC6159	eosinophil-associa
28	110	19.1	124	1	NRGA	pancreatic ribonuc
29	110	19.1	156	2	JC6160	eosinophil-associa

Search completed: May 7, 2004, 21:54:54
Job time : 9.43686 secs

GenCore version 5.1.6
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OM protein - protein search, using sw model

Run on: May 7, 2004, 21:30:40 ; Search time 5.25351 Seconds
(without alignments)

1030.796 Million cell updates/sec

Title: US-09-961-400-11

Perfect score: 577

Sequence: 1 SDMLTFQKKHLNTRDVCN.....TFCVTCENQAPVHFVGVC 104

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 141681 seqs, 52070155 residues

Total number of hits satisfying chosen parameters: 141681

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database : SwissProt_42.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	551	95.5	104	RN30_RANPI	P22069 rana pipien
2	287	49.7	133	RNPO_RANCA	P11916 rana catesb
3	280.5	48.6	111	LECS_RANCA	P18839 rana japoni
4	264.5	45.8	111	RNPL_RANCA	P14626 rana catesb
5	144	25.0	119	RNP_IGUIG	P80287 iguana igua
6	132	22.9	124	RNP_GALMU	P00680 galea muste
7	130.5	22.6	145	ANGR_MOUSE	Q64438 mus musculu
8	130.5	22.6	146	ANGI_CERAE	Q8W666 cercopithe
9	128	22.2	148	ANGI_BOVIN	P10152 bos taurus
10	126	21.8	128	RNP_MYOCC	P00676 myocastor c
11	125	21.7	124	RNP_BALAC	P00673 balaenopter
12	121.5	21.1	146	ANGI_MACMU	Q8W663 macaca mula
13	120	20.8	128	RNPB_CAVPO	P00679 cavia porce
14	120	20.7	128	RNP_PROGU	P04059 proechimys
15	119.5	20.7	145	ANGI_MOUSE	P21570 mus musculu
16	118.5	20.5	146	ANGI_PAPHA	Q8W664 papio hanad
17	118	20.5	124	RNP_CHIBR	P00675 chinchilla
18	117	20.3	128	RNP_HYDHY	P00677 hydrochoeru
19	116	20.1	125	ANGI_RABIT	P31347 oryctolagus
20	115	19.9	146	ANGI_MIOTA	Q8W665 mopthecus
21	114	19.8	124	RNP_HIPAM	P00672 hippopotamu
22	113.5	19.7	147	RNS4_PANTR	Q8hzq0 pan troglod
23	113	19.6	147	ANGI_HUMAN	P03950 homo sapien
24	113	19.6	147	ANGI_PANTR	Q8wme8 pan troglod
25	113	19.6	156	ECF3_MOUSE	O35290 mus musculu
26	112	19.4	124	RNP_PIG	P00671 sus scrofa
27	112	19.4	128	RNP_HVSCR	P04060 hystric cri
28	112	19.4	150	RNP_BOVIN	P00656 bos taurus
29	112	19.4	156	RNP_MYOGL	Q9wsu1 myoxus glis
30	111.5	19.3	147	RNS4_HUMAN	P34096 homo sapien
31	111	19.2	128	RNP_HORSE	P00674 equus cabal
32	111	19.2	146	ANGI_SAISC	Q8W660 salmiri sci
33	111	19.2	167	RNBR_BOVIN	P39873 bos taurus

34	110.5	19.2	123	1	ANGI_PIG	P31346 sus scrofa
35	110.5	19.2	155	1	ECF1_MOUSE	P97426 mus musculu
36	110	19.1	124	1	RNPA_CAVPO	P00678 cavia porce
37	110	19.1	141	1	RNBR_GIRCA	Q29542 giraffa cam
38	110	19.1	146	1	ANGI_SAGOE	Q8wn62 saquinus oe
39	110	19.1	151	1	RNBR_AXIPR	P87350 axis porcin
40	110	19.1	156	1	ECF2_MOUSE	P97425 mus musculu
41	109	18.9	123	1	ANG2_BOVIN	P80929 bos taurus
42	109	18.9	124	1	RNP_AEPME	P07847 aepyceros m
43	109	18.9	124	1	RNP_ANTAM	P00668 antilocapra
44	109	18.9	124	1	RNP_SHEEP	P00661 ovis aries
45	108.5	18.8	150	1	RNS6_SAISC	O46529 salmiri sci

ALIGNMENTS

RESULT 1

ID	RN30_RANPI	STANDARD;	PRT;	104 AA.
AC	P22069;			
DT	01-AUG-1991 (Rel. 19, Created)			
DT	01-FEB-1994 (Rel. 28, last sequence update)			
DT	28-FEB-2003 (Rel. 41, last annotation update)			
DE	P-30 protein (EC 3.1.27.-) (Onconase).			
OS	Rana pipiens (Northern leopard frog).			
OC	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;			
OC	Amphibia; Batrachia; Anura; Neobatrachia; Ranoidea; Ranidae; Rana.			
OX	NCBI_TaxID=8404;			
RN	[1]			
RP	SEQUENCE.			
RC	TISSUE=Embryo;			
RX	MEDLINE=91093131; PubMed=1985896;			
RA	Ardelt W., Mikulski S.M., Shogen K.;			
RT	"Amino acid sequence of an anti-tumor protein from Rana pipiens oocytes and early embryos. Homology to pancreatic ribonucleases.";			
RL	J. Biol. Chem. 266:245-251(1991).			
RN	[2]			
RP	3D-STRUCTURE MODELING.			
RX	MEDLINE=93066156; PubMed=1438177;			
RA	Mosimann S.C., Johns K.L., Ardelt W., Mikulski S.M., Shogen K.,			
RA	James M.N.G.;			
RT	"Comparative molecular modeling and crystallization of P-30 protein: a novel antitumor protein of Rana pipiens oocytes and early embryos.";			
RL	Proteins 14:392-400(1992).			
RN	[3]			
RP	X-RAY CRYSTALLOGRAPHY (1.7 ANGSTROMS).			
RX	MEDLINE=94166079; PubMed=8120892;			
RA	Mosimann S.C., Ardelt W., James M.N.G.;			
RT	"Refined 1.7 A X-ray crystallographic structure of P-30 protein, an amphibian ribonuclease with anti-tumor activity.";			
RL	J. Mol. Biol. 236:1141-1153(1994).			
CC	FUNCTION: Basic protein with antiproliferative/cytotoxic activity against several tumor cell lines in vitro, as well as antitumor in vivo. It exhibits a ribonuclease-like activity against high molecular weight ribosomal RNA.			
CC	DEVELOPMENTAL STAGE: Early embryos (up to four blastomere stage).			
CC	SIMILARITY: Belongs to the pancreatic ribonuclease family.			
DR	PDB; 1ONC; 31-JAN-94.			
DR	InterPro; IPR001427; RNaseA.			
DR	Pfam; PF00074; rnasea; 1.			
DR	ProDom; PD000535; RNaseA; 1.			
DR	SMART; SMO0092; RNase_Pc; 1.			
DR	PROSITE; PS00127; RNASE_PANCREATIC; 1.			
KW	Hydrolase; Nuclease; Endonuclease; 3D-structure; Pyrrolidone carboxylic acid.			
FT	MOD_RES	1	1	1
FT	ACT_SITE	10	10	10
FT	ACT_SITE	31	31	31
FT	ACT_SITE	97	97	97
FT	DISULFID	19	68	68
FT	DISULFID	30	75	75

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FT DISULFID 48 90
FT DISULFID 87 104
FT HELIX 3 10
FT STRAND 11 12
FT HELIX 19 22
FT TURN 23 24
FT TURN 26 30
FT STRAND 33 38
FT STRAND 41 45
FT HELIX 46 48
FT TURN 49 50
FT STRAND 55 58
FT STRAND 63 70
FT TURN 74 75
FT STRAND 77 84
FT STRAND 86 91
FT TURN 92 93
FT STRAND 94 101
SQ SEQUENCE 104 AA; 11845 MW; 22A753C2F9E566B4 CRC64;

Query Match 95.5%; Score 551; DB 1; Length 104;
Best Local Similarity 96.1%; Pred. No. 3.5e-52;
Matches 99; Conservative 2; Mismatches 2; Indels 0; Gaps 0;

QY 2 DWLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPEVPVKAICKGIASKNVLITS 61
Db 2 DWLTFQKKHITNRDVCNNIMSTNLFHCKDKNTFIYSRPEVPVKAICKGIASKNVLITS 61

QY 62 EYFLSDCNVTSRPKYKLLKSNSTFCVTENQAPVHFVGVGHC 104
Db 62 EYFLSDCNVTSRPKYKLLKSNSTFCVTENQAPVHFVGVGSC 104

RESULT 2
RNPO RANCA STANDARD; PRT; 133 AA.
ID RNPO RANCA STANDARD; PRT; 133 AA.
AC P11916; Q9PWR7;
DT 01-OCT-1989 (Rel. 12, Created)
DT 10-OCT-2003 (Rel. 42, Last sequence update)
DT 10-OCT-2003 (Rel. 42, Last annotation update)
DE Ribonuclease, oocytes precursor (EC 3.1.27.-) (RC-RNase) (Sialic acid-
binding lectin) (SBU-C).
GN RCR.
OS Rana catesbeiana (Bull frog).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Amphibia; Batrachia; Anura; Neobatrachia; Ranioidea; Ranidae; Rana.
OX NCBI_TaxID=8400;
RN [1]_TaxID=8400;
RP SEQUENCE FROM N.A.
RC TISSUE=Liver;
RX MEDLINE=98165825; PubMed=9497370;
RA Huang H.C., Wang S.C., Leu Y.J., Lu S.C., Liao Y.D.;
RT "The Rana catesbeiana rcr gene encoding a cytotoxic ribonuclease.
Tissue distribution, cloning, purification, cytotoxicity, and active
residues for RNase activity.";
RL J. Biol. Chem. 273:6395-6401(1998).
RN [2]
RP SEQUENCE OF 23-133.
RC TISSUE=Egg;
RX MEDLINE=87299649; PubMed=3304421;
RA Titani K., Takio K., Kuwada M., Nitta K., Sakakibara F., Kawauchi H.,
RA Takayanagi Y., Hakomori S.;
RT "Amino acid sequence of sialic acid binding lectin from frog (Rana
catesbeiana) eggs.";
RL Biochemistry 26:2189-2194 (1987).
RN [3]
RP CHARACTERIZATION, AND SEQUENCE OF 81-101.
RX MEDLINE=92220613; PubMed=1373237;
RA Liao Y.-D.;
RT "A pyrimidine-guanine sequence-specific ribonuclease from Rana
catesbeiana (bullfrog) oocytes.";
RL Nucleic Acids Res. 20:1371-1377(1992).
RN [4]

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RP CHARACTERIZATION.
RX TISSUE=Egg;
RX MEDLINE=93192604; PubMed=8448385;
RA Nitta K., Oyama F., Oyama R., Sekiguchi K., Kawauchi H.,
RA Takayanagi Y., Hakomori S., Titani K.;
RT "Ribonuclease activity of sialic acid-binding lectin from Rana
catesbeiana eggs.";
RL Glycobiology 3:37-45(1993).
RN [5]
RP STRUCTURE BY NMR OF 23-133.
RX MEDLINE=98437383; PubMed=9761686;
RA Chang C.-F., Chen C., Chen Y.-C., Hom K., Huang R.-F., Huang T.H.;
RT "The solution structure of a cytotoxic ribonuclease from the oocytes
of Rana catesbeiana (bullfrog).";
RL J. Mol. Biol. 283:231-244(1998).
CC -!- FUNCTION: Preferentially cleaves single-stranded RNA at pyrimidine
residues with a 3'flanking guanine. Hydrolyzes poly(U) and poly(C)
as substrates, and prefers the former. The S-lectins in frog eggs
may be involved in the fertilization and development of the frog
embryo. This lectin agglutinates various animal cells, including
normal lymphocytes, erythrocytes, and fibroblasts of animal and
human origin. It is cytotoxic against several tumor cells.
CC -!- SUBUNIT: Monomer.
CC -!- SIMILARITY: Belongs to the pancreatic ribonuclease family.
CC -!- SUBCELLULAR LOCATION: Secreted.
CC This SWISS-PROT entry is copyright. It is produced through a collaboration
between the Swiss Institute of Bioinformatics and the EMBL outstation -
the European Bioinformatics Institute. There are no restrictions on its
use by non-profit institutions as long as its content is in no way
modified and this statement is not removed. Usage by and for commercial
entities requires a license agreement (See http://www.isb-sib.ch/announce/
or send an email to license@isb-sib.ch).
CC -----
DR EMBL; AF039104; AAD10702.1; -
DR PIR; A27121; A27121.
DR PDB; 1BC4; 28-OCT-98.
DR PDB; 1M07; 21-JAN-03.
DR InterPro; IPR001427; RNaseA.
DR Pfam; PF00074; RNaseA; 1.
DR ProDom; PD000535; RNaseA; 1.
DR SMART; SM00092; RNase PC; 1.
DR PROSITE; PS00127; RNASE_PANCREATIC; 1.
KW Hydrolase; Nuclease; Endonuclease; Sialic acid; Lectin; 3D-structure;
KW Signal; Pyrrolidone carboxylic acid.
FT SIGNAL. 1 22
FT CHAIN 23 133 RIBONUCLEASE, OOCYTES.
FT MOD_RES 23 23 PYRROLIDONE CARBOXYLIC ACID.
FT ACT_SITE 32 32
FT ACT_SITE 57 57
FT ACT_SITE 125 125
FT DISULFID 41 93
FT DISULFID 56 103
FT DISULFID 74 118
FT DISULFID 115 132
FT HELIX 25 32
FT HELIX 41 45
FT TURN 48 49
FT STRAND 59 63
FT HELIX 67 73
FT TURN 74 74
FT STRAND 79 84
FT STRAND 90 95
FT STRAND 105 110
FT STRAND 114 119
FT TURN 120 121
FT STRAND 122 129
SQ SEQUENCE 133 AA; 14762 MW; A7D62594F7D16F0C CRC64;

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Query Match 49.7%; Score 287; DB 1; Length 133;
Best Local Similarity 49.1%; Pred. No. 7.4e-24;
Matches 54; Conservative 16; Mismatches 32; Indels 8; Gaps 3;

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QY 2 DMLTQKHLTNRDVCNNIMSTNLF-----HCKDKNTFIYSRPEPVKAICKGIIASKNV 57
DB 24 NWATFQKHIIINTPIINCNTIMNNIYIVGGQCKRVNTFISSATTKAICTGVI-NMNV 82
QY 58 LTTSEFYLSDC---NVTSPCKYKLSKSTNTFCVTCENQAPVHFVGVGHC 104
DB 83 LSTTRFQLNCTRTSITPRPCPYSSRTETNYICVKCENQYPVHFAGIGRC 132

RESULT 3
LECS_RANJA
ID LECS_RANJA STANDARD; PRT; 111 AA.
AC P18639;
DT 01-NOV-1990 (Rel. 16, Created)
DT 01-FEB-1994 (Rel. 28, Last sequence update)
DT 10-OCT-2003 (Rel. 42, Last annotation update)
DE Sialic acid-binding lectin (EC 3.1.27.-).
OS Rana japonica (Japanese reddish frog).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Amphibia; Batrachia; Anura; Neobatrachia; Ranioidea; Ranidae; Rana.
NCBI_TaxID=8402;
RN [1]
RP SEQUENCE, AND DISULFIDE BONDS.
RC TISSUE=Egg;
RX MEDLINE=91035319; PubMed=2229005;
RA Kamiya Y., Oyama F., Oyama R., Sakakibara F., Nitta K., Kawauchi H.,
RT Takayanagi Y., Titani K.;
RT "Amino acid sequence of a lectin from Japanese frog (Rana japonica)
RT eggs.";
RL J. Biochem. 108:139-143 (1990).
CC -!- FUNCTION: The S-lectins in frog eggs may be involved in the
CC fertilization and development of the frog embryo. This lectin
CC preferentially agglutinates a large variety of tumor cells, but it
CC does not agglutinate non-transformed cells and erythrocytes.
CC -!- SUBUNIT: Monomer.
CC -!- SUBCELLULAR LOCATION: Secreted.
CC -!- SIMILARITY: Belongs to the pancreatic ribonuclease family.
DR PIR; JX0120; JX0120.
DR HSSP; P11916; IBC4.
DR InterPro; IPR001427; RNaseA.
DR Pfam; PF00074; RNaseA; 1.
DR ProDom; PD000535; RNaseA; 1.
DR SMART; SM00092; RNase_Pc; 1.
DR PROSITE; PS00127; RNASE_PANCREATIC; 1.
KW Pyridolone carboxylic acid.
FT MOD_RES 1 1 PYRROLIDONE CARBOXYLIC ACID.
FT ACT_SITE 10 10 BY SIMILARITY.
FT ACT_SITE 35 35 BY SIMILARITY.
FT ACT_SITE 104 104 BY SIMILARITY.
FT DISULFID 19 72 BY SIMILARITY.
FT DISULFID 34 82 BY SIMILARITY.
FT DISULFID 52 97 BY SIMILARITY.
FT DISULFID 94 111 PROBABLE.
SQ SEQUENCE 111 AA; 12326 MW; FDEBDDF3834ED679 CRC64;

Query Match 48.6%; Score 280.5; DB 1; Length 111;
Best Local Similarity 44.5%; Pred. No. 3e-23;
Matches 49; Conservative 19; Mismatches 35; Indels 7; Gaps 2;

QY 2 DMLTQKHLTNRDVCNNIMSTNLF-----HCKDKNTFIYSRPEPVKAICKGIIASKNV 57
DB 24 NWATFQKHIIINTPIINCNTIMNNIYIVGGQCKRVNTFISSATTKAICTGVI-NMNV 82
QY 58 LTTSEFYLSDC---NVTSPCKYKLSKSTNTFCVTCENQAPVHFVGVGHC 104
DB 83 LSTTRFQLNCTRTSITPRPCPYSSRTETNYICVKCENQYPVHFAGIGRC 132

RESULT 4
RNPL_RANCA
ID RNPL_RANCA STANDARD; PRT; 111 AA.
AC P14626;

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DT 01-APR-1990 (Rel. 14, Created)
DT 01-FEB-1994 (Rel. 28, Last sequence update)
DT 28-FEB-2003 (Rel. 41, Last annotation update)
DE Ribonuclease, liver (EC 3.1.27.5).
OS Rana catesbeiana (Bull frog).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Amphibia; Batrachia; Anura; Neobatrachia; Ranioidea; Ranidae; Rana.
NCBI_TaxID=8400;
RN [1]
RP SEQUENCE.
RC TISSUE=Liver;
RX MEDLINE=90130374; PubMed=2613682;
RA Nitta R., Katayama N., Okabe Y., Iwama M., Watanabe H., Abe Y.,
RA Okazaki T., Ohgi K., Irie M.;
RT "Primary structure of a ribonuclease from bullfrog (Rana catesbeiana)
RT liver.";
RL J. Biochem. 106:729-735 (1989).
CC -!- CATALYTIC ACTIVITY: Endonucleolytic cleavage to nucleoside 3'-
CC phosphates and 3'-phosphooligonucleotides ending in C-P or U-P
CC with 2',3'-cyclic phosphate intermediates.
CC -!- SUBCELLULAR LOCATION: Secreted.
CC -!- SIMILARITY: Belongs to the pancreatic ribonuclease family.
DR PIR; JX0085; JX0085.
DR HSSP; P11916; IBC4.
DR InterPro; IPR001427; RNaseA.
DR Pfam; PF00074; RNaseA; 1.
DR ProDom; PD000535; RNaseA; 1.
DR SMART; SM00092; RNase_Pc; 1.
DR PROSITE; PS00127; RNASE_PANCREATIC; 1.
KW Hydrolyase; Nuclease; Endonuclease; Pyridolone carboxylic acid.
FT MOD_RES 1 1 PYRROLIDONE CARBOXYLIC ACID.
FT ACT_SITE 10 10 BY SIMILARITY.
FT ACT_SITE 35 35 BY SIMILARITY.
FT ACT_SITE 104 104 BY SIMILARITY.
FT DISULFID 19 72 BY SIMILARITY.
FT DISULFID 34 82 BY SIMILARITY.
FT DISULFID 52 97 BY SIMILARITY.
FT DISULFID 94 111 PROBABLE.
SQ SEQUENCE 111 AA; 12461 MW; D64BA72456C10788 CRC64;

Query Match 45.8%; Score 264.5; DB 1; Length 111;
Best Local Similarity 42.7%; Pred. No. 1.5e-21;
Matches 47; Conservative 19; Mismatches 37; Indels 7; Gaps 2;

QY 2 DMLTQKHLTNRDVCNNIMSTNLF-----HCKDKNTFIYSRPEPVKAICKGIIASKNV 57
DB 24 NWATFQKHIIINTPIINCNTIMNNIYIVGGQCKRVNTFISSATTKAICTGVI-NMNV 82
QY 58 LTTSEFYLSDC---NVTSPCKYKLSKSTNTFCVTCENQAPVHFVGVGHC 104
DB 62 LSTTSFKLNTCIRSDITPRPCPYHPSDNNKICVKCKQLPVHFVGVGIC 111

RESULT 5
RNP_IGUIG
ID RNP_IGUIG STANDARD; PRT; 119 AA.
AC P80287;
DT 01-FEB-1994 (Rel. 28, Created)
DT 01-FEB-1994 (Rel. 28, Last sequence update)
DT 28-FEB-2003 (Rel. 41, Last annotation update)
DE Ribonuclease pancreatic (EC 3.1.27.5) (RNase 1) (RNase A).
OS Iguana iguana (Common iguana).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Lepidosauria; Squamata; Iguania; Iguanidae; Iguaninae; Iguana.
NCBI_TaxID=8517;
RN [1]
RP SEQUENCE.
RC TISSUE=Pancreas;
RX MEDLINE=94139745; PubMed=8307028;
RA Zhao W., Beintema J.J., Hofsteenge J.;
RT "The amino acid sequence of iguana (Iguana iguana) pancreatic
RT ribonuclease.";
RL Eur. J. Biochem. 219:641-646 (1994).

```

CC -1- CATALYTIC ACTIVITY: Endonucleolytic cleavage to nucleoside 3'-
 CC phosphates and 3'-phosphooligonucleotides ending in C-P or U-P
 CC with 2',3'-cyclic phosphate intermediates.
 CC -1- SUBCELLULAR LOCATION: Secreted.
 CC -1- TISSUE SPECIFICITY: Pancreas.
 CC -1- SIMILARITY: Belongs to the pancreatic ribonuclease family.
 DR PIR; S41111; S4111.
 DR HSP; P00656; ILSQ.
 DR InterPro; IPR001427; RNaseA.
 DR Pfam; PF00074; RNaseA; 1.
 DR PRINTS; PR00794; RIBONUCLEASE.
 DR ProDom; PD000535; RNaseA; 1.
 DR SMART; SM00092; RNase_Pc; 1.
 DR PROSITE; PS00127; RNASE_PANCREATIC; 1.
 KW Hydrolase; Nuclease; Endonuclease; Pyrrolidone carboxylic acid.
 FT MOD_RES 1 1 PYRROLIDONE CARBOXYLIC ACID.
 FT DISULFID 25 80 BY SIMILARITY.
 FT DISULFID 39 91 BY SIMILARITY.
 FT DISULFID 57 106 BY SIMILARITY.
 FT ACT_SITE 10 10 BY SIMILARITY.
 FT ACT_SITE 40 40 BY SIMILARITY.
 FT ACT_SITE 113 113 BY SIMILARITY.
 FT ACT_SITE 113 113 BY SIMILARITY.
 SQ SEQUENCE 119 AA; 13324 MW; 6072FB5B7B15BD5A CRC64;
 Query Match 25.0%; Score 144; DB 1; Length 119;
 Best Local Similarity 30.1%; Pred. No. 1.2e-08;
 Matches 34; Conservative 19; Mismatches 44; Indels 16; Gaps 5;
 QY 2 DWLTFQKKHL-----TNRDVCNNIM---STNLFHCKDKNTFIYSRPFVKAIC--KG 50
 ||:||||:
 Db 2 DWSFQNKHDYPTGASNPAYCDLMMQRRNLNPTKCKTRNTFVHASPSIEIQVCGSG 61
 QY 51 IIAKSNVLTSE--FYLSDC---NVTSPCKYKLLKSTNTFCVTCENQAPVHF 98
 ||:||||:
 Db 62 THYEDNLNDSNESFDLTDCKNVGTAPSSCKYNGTGTGKIRIACENNPQVHF 114
 RESULT 6
 RNP_GALMU
 ID_RNP_GALMU STANDARD; PRT; 124 AA.
 AC P00680;
 DT 21-JUL-1986 (Rel. 01, Created)
 DT 21-JUL-1986 (Rel. 01, Last sequence update)
 DT 28-FEB-2003 (Rel. 41, Last annotation update)
 DE Ribonuclease pancreatic (EC 3.1.27.5) (RNase 1) (RNase A).
 GN RNASE1 OR RNS1.
 OS Galea musteloides (Cuis).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Rodentia; Hystricognathi; Caviidae; Galea.
 OX NCBI_TaxID=10146;
 RN [1]
 RP SEQUENCE
 RX MEDLINE=87036770; PubMed=6571219;
 RA Beintema J.U., Neuteboom B.;
 RT "Origin of the duplicated ribonuclease gene in guinea-pig: comparison
 RT of the amino acid sequences with those of two close relatives:
 RT capybara and cuis ribonuclease";
 RL J. Mol. Evol. 19:145-152(1983).
 CC -1- CATALYTIC ACTIVITY: Endonucleolytic cleavage to nucleoside 3'-
 CC phosphates and 3'-phosphooligonucleotides ending in C-P or U-P
 CC with 2',3'-cyclic phosphate intermediates.
 CC -1- SUBCELLULAR LOCATION: Secreted.
 CC -1- TISSUE SPECIFICITY: Pancreas.
 CC -1- SIMILARITY: Belongs to the pancreatic ribonuclease family.
 DR PIR; A08827; NRUI.
 DR HSP; P00656; ISRN.
 DR InterPro; IPR001427; RNaseA.
 DR Pfam; PF00074; RNaseA; 1.
 DR PRINTS; PR00794; RIBONUCLEASE.
 DR ProDom; PD000535; RNaseA; 1.
 DR SMART; SM00092; RNase_Pc; 1.
 DR PROSITE; PS00127; RNASE_PANCREATIC; 1.
 KW Hydrolase; Nuclease; Endonuclease.

FT DISULFID 26 84 BY SIMILARITY.
 FT DISULFID 40 95 BY SIMILARITY.
 FT DISULFID 58 110 BY SIMILARITY.
 FT DISULFID 65 72 BY SIMILARITY.
 FT ACT_SITE 12 12 BY SIMILARITY.
 FT ACT_SITE 41 41 BY SIMILARITY.
 FT ACT_SITE 119 119 BY SIMILARITY.
 FT VARIANT 1 1 MISSING (IN 1/3 OF THE MOLECULES).
 SQ SEQUENCE 124 AA; 13870 MW; 609C7E251A7BBA25 CRC64;
 Query Match 22.9%; Score 132; DB 1; Length 124;
 Best Local Similarity 30.6%; Pred. No. 2.5e-07;
 Matches 38; Conservative 18; Mismatches 36; Indels 32; Gaps 7;
 QY 1 SDWLTQKKHL-----TNRDVCNNIM---STNLFHCKDKNTFIYSRPFVKAICKG 50
 ||:||||:
 Db 3 SSAMKFRQHQHSDGHDPTNTN--YCNEMVMRRSTQGRCKPVNTFVHEPLEAVQAVC-- 58
 QY 51 IIAKSNV-----LTTSEFYLSDCNVTSRP-----CKYKLLKSTNTFCVTCE--QA 94
 ||:||||:
 Db 59 --SQKNVPCNGQTNCYQSHSSNRITDCRVTSSTSKYPNCSTYRMTQAKSIIVACEGTPSV 116
 QY 95 PVHF 98
 |||||
 Db 117 PVHF 120
 RESULT 7
 ANGR_MOUSE
 ID_ANGR_MOUSE STANDARD; PRT; 145 AA.
 AC O64438;
 DT 01-NOV-1997 (Rel. 35, Created)
 DT 01-NOV-1997 (Rel. 35, Last sequence update)
 DT 28-FEB-2003 (Rel. 41, Last annotation update)
 DE Angiogenin-related protein precursor.
 DE ANGRP.
 OS Mus musculus (Mouse).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
 OX NCBI_TaxID=10090;
 RN [1]
 RP SEQUENCE FROM N.A.
 RX STRAIN=129; TISSUE=Liver;
 RC MEDLINE=96079109; PubMed=8530072;
 RA Brown W.E., Nobile V., Subramanian V., Shapiro R.;
 RT "The mouse angiogenin gene family: structures of an angiogenin-related
 RT protein gene and two pseudogenes";
 RL Genomics 29:200-206(1995).
 CC -1- SIMILARITY: Belongs to the pancreatic ribonuclease family.
 CC
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 CC
 CC EMBL; U22519; AAA91367.1; -.
 DR HSP; P03950; 1A4Y.
 DR MGD; MGI:104984; Angrip.
 DR InterPro; IPR001427; RNaseA.
 DR Pfam; PF00074; RNaseA; 1.
 DR PRINTS; PR00794; RIBONUCLEASE.
 DR ProDom; PD000535; RNaseA; 1.
 DR SMART; SM00092; RNase_Pc; 1.
 DR PROSITE; PS00127; RNASE_PANCREATIC; 1.
 KW Signal; Hydrolase; Nuclease; Endonuclease;
 KW Pyrrolidone carboxylic acid.
 FT SIGNAL 1 24 POTENTIAL.
 FT CHAIN 25 145 ANGIOGENIN-RELATED PROTEIN.
 FT MOD_RES 25 25 PYRROLIDONE CARBOXYLIC ACID (BY
 FT SIMILARITY).

FT	ACT_SITE	37	37	BY SIMILARITY.	
FT	ACT_SITE	64	64	BY SIMILARITY.	
FT	ACT_SITE	138	138	BY SIMILARITY.	
FT	DISULFID	50	105	BY SIMILARITY.	
FT	DISULFID	63	116	BY SIMILARITY.	
FT	DISULFID	81	131	BY SIMILARITY.	
SQ	SEQUENCE	146 AA;	16444 MW;	27860112E85B8DF9	CRC64;

Query Match 22.6%; Score 130.5; DB 1; Length 146;

Best Local Similarity 30.7%; Pred. No. 4.3e-07; Indels 23

Matches 31; Conservative 17; Mismatches 30;

QY	5	TFQKKHLTNRDVCNIMSTNLFCKKNTIYSRPEPVKAIC---	KGIIA
Db	53	TMRRHLLTSP-----	CKDINTFHGNRRHHKICGDCNGNPY

QY	61	SEFYLSDCNVTs----	RPCKYKLKSTNTFCVTCENQAPVH	97
Db	98	SPFQVTTCLNLRGGSPRPCCQYATRGSRNIVGCEGLP	VPVH	138

RESULT 9

ANG1_BOVIN	ANG1_BOVIN	STANDARD;	PRT; 148 AA.
AC	P10152; Q9GKP9;		
AD	01-MAR-1989 (Rel. 10, Created)		
DT	28-FEB-2004 (Rel. 41, Last sequence update)		
DT	15-MAR-2004 (Rel. 43, Last annotation update)		
DE	Angiogenin-1 precursor (EC 3.1.27.-).		
GN	ANG1 OR ANG.		
OS	Bos taurus (Bovine).		
OC	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi		
OC	Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae		
OC	Bovidae; Bovinae; Bos.		
OX	NCBI_TaxID=9913;		
[1]			
RN	SEQUENCE FROM N.A.		
RP	SEQUENCE-Liver;		
RC	Chang S.-I.;		
RA	"Cloning, sequencing, and expression of bovine angiogenin."		
RT	Submitted (MAR-1999) to the EMBL/GenBank/DBJ databases.		
RL			
[2]			
RN	SEQUENCE OF 24-148.		
RP	SEQUENCE-Milk;		
RC	MEDLINE=89065101; PubMed=3197838;		
RA	Maes P., Damart D., Rommens C., Montreuil J., Spik G., Tartar		
RT	"The complete amino acid sequence of bovine milk angiogenin."		
RL	FEBS Lett. 241:41-45(1988).		
[3]			
RN	SEQUENCE OF 24-148.		
RP	SEQUENCE-Plasma;		
RC	MEDLINE=89375344; PubMed=2775757;		
RA	Bond M.D., Strydom D.J.;		
RT	"Amino acid sequence of bovine angiogenin.";		
RL	Biochemistry 28:6110-6113(1989).		
[4]			
RN	CHARACTERIZATION, AND SEQUENCE OF 25-55.		
RP	SEQUENCE-Plasma;		
RC	MEDLINE=89118214; PubMed=3064806;		
RA	Bond M.D., Vallee B.L.;		
RT	"Isolation of bovine angiogenin using a placental ribonuclea		
RL	inhibitor binding assay.";		
RL	Biochemistry 27:6282-6287(1988).		
[5]			
RN	X-RAY CRYSTALLOGRAPHY (1.5 ANGSTROMS).		
RP	MEDLINE=95224057; PubMed=7708754;		
RC	Acharya K.R., Shapiro R., Riordan J.F., Vallee B.L.;		
RA	"Crystal structure of bovine angiogenin at 1.5-A resolution.		
RT	proc. Natl. Acad. Sci. U.S.A. 92:2949-2953(1995).		
RL			
[6]			
RN	STRUCTURE BY NMR.		
RP	MEDLINE=96280645; PubMed=8688423;		
RC	Lequin O., Albaret C., Bontems F., Spik G., Lallemand J.-Y.;		
RA			


```
DR InterPro; IPR001427; RNaseA.
DR Pfam; PF00074; RNaseA; 1.
DR PRINTS; PR00794; RIBONUCLEASE.
DR ProDom; PD000535; RNaseA; 1.
DR SMART; SM00092; RNaseA; 1.
DR PROSITE; PS00127; RNASE_PANCREATIC; 1.
DR KW Hydrolyase; Nuclease; Endonuclease; Glycoprotein.
DR PROSITE; PS00127; RNASE_PANCREATIC; 1.
DR FT SIGNAL 1 24
FT CHAIN 25 146
FT MOD_RES 25 25
FT ACT_SITE 37 37
FT ACT_SITE 64 64
FT ACT_SITE 138 138
FT DISULFID 50 105
FT DISULFID 63 116
FT DISULFID 81 131
FT CARBOHYD 76 76
SQ SEQUENCE 124 AA; 14125 MW; F57475459P697E20 CRC64;

Query Match 21.7%; Score 125; DB 1; Length 124;
Best Local Similarity 28.6%; Pred. No. 1.4e-06;
Matches 34; Conservative 15; Mismatches 42; Indels 28; Gaps 6;

QY 4 LTFQKKHLTNTDVID-----CNNTIMTNLF---HCKDKNTFIYSRPEPVKAIC--KGLIASKNVLTT 55
DB 6 MKFQKQHEHDSGNSPQNNFNQNMRRRTQGRCKPNTVFHESLEDVKAVC-----SQK 61

QY 56 NVL-----TTFEYLSDCNVTSRP-----CKYKLKSTNTFCVTCENQAPVH 98
DB 62 NVLCKNGRTNCYESNTWHITDCRTGSSKYPNCAYKTSQREKHLIVACEGNFYVPVHF 120

RESULT 12
ANGI_MACMU
ID _ANGI_MACMU STANDARD; PRT; 146 AA.
AC Q8WN63;
DT 28-FEB-2003 (Rel. 41, Created)
DT 28-FEB-2003 (Rel. 41, Last sequence update)
DT 28-FEB-2003 (Rel. 41, Last annotation update)
DE Angiogenin precursor (EC 3.1.27.-) (Ribonuclease 5) (RNase 5).
GN ANG OR RNASE5.
OS Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Cercopitheidae;
OC Cercopitheidae; Macaca.
OX NCBI_TaxID=9544;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=21918422; PubMed=11919285;
RA Zhang J., Rosenberg H.F.;
RT "Diversifying selection of the tumor-growth promoter angiogenin in primate evolution."
RL Mol. Biol. Evol. 19:438-445(2002).
CC -!- FUNCTION: May function as a tRNA-specific ribonuclease that binds to actin on the surface of endothelial cells; once bound, thereby angiogenin is endocytosed and translocated to the nucleus, thereby promoting the endothelial invasiveness necessary for blood vessel formation. Angiogenin induces vascularization of normal and malignant tissues. Abolishes protein synthesis by specifically hydrolyzing cellular tRNAs (By similarity).
CC -!- SUBCELLULAR LOCATION: Secreted.
CC -!- SIMILARITY: Belongs to the pancreatic ribonuclease family.
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CC -----
DR EMBL; AF41667; AAL61649.1; --
DR InterPro; IPR001427; RNaseA.
DR Pfam; PF00074; RNaseA; 1.
DR PRINTS; PR00794; RIBONUCLEASE.
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DR ProDom; PD000535; RNaseA; 1.
DR SMART; SM00092; RNaseA; 1.
DR PROSITE; PS00127; RNASE_PANCREATIC; 1.
DR KW Hydrolyase; Nuclease; Endonuclease; Angiogenesis;
DR PROSITE; PS00127; RNASE_PANCREATIC; 1.
DR FT SIGNAL 1 24
FT CHAIN 25 146
FT MOD_RES 25 25
FT ACT_SITE 37 37
FT ACT_SITE 64 64
FT ACT_SITE 138 138
FT DISULFID 50 105
FT DISULFID 63 116
FT DISULFID 81 131
FT DISULFID 81 131
SQ SEQUENCE 146 AA; 16301 MW; E39A89215DB2A2A4 CRC64;

Query Match 21.1%; Score 121.5; DB 1; Length 146;
Best Local Similarity 28.7%; Pred. No. 3.9e-06;
Matches 29; Conservative 17; Mismatches 32; Indels 23; Gaps 4;

QY 5 TFOKKHLTNTDVIDCNNTIMTNLFHCKDKNTFIYSRPEPVKAIC---KGLIASKNVLTT 60
DB 53 TMRRLHTSP-----CKDINTFVGNRHHTAICGDENGSPYGGNLRIST 97

QY 61 SEFYLSDCNVTSRP-----RPCKYKLKSTNTFCVTCENQAPVH 97
DB 98 SPFQVTTCKLGGSPRPFCQYRATGSGNSIVVGCENGLPVH 138

RESULT 13
RNPB_CAVPO
ID _RNPB_CAVPO STANDARD; PRT; 128 AA.
AC P00679;
DT 21-JUL-1986 (Rel. 01, Created)
DT 21-JUL-1986 (Rel. 01, Last sequence update)
DT 28-FEB-2003 (Rel. 41, Last annotation update)
DE Ribonuclease pancreatic B (EC 3.1.27.5) (RNase IB).
OS Cavia porcellus (Guinea pig).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Hystriognathi; Caviidae; Cavia.
OX NCBI_TaxID=10141;
RN [1]
RP SEQUENCE.
RC TISSUE=Pancreas;
RX MEDLINE=77185023; PubMed=862624;
RA van den Berg A., van den Hende-Timmer L., Hofsteenge J., Gaastra W., Beintema J.J.;
RT "Guinea-pig pancreatic ribonucleases. Isolation, properties, primary structure and glycosylation."
RL Eur. J. Biochem. 75:91-100(1977).
CC -!- CATALYTIC ACTIVITY: Endonucleolytic cleavage to nucleoside 3'-phosphates and 3'-phosphooligonucleotides ending in C-P or U-P with 2',3'-cyclic phosphate intermediates.
CC -!- SUBCELLULAR LOCATION: Secreted.
CC -!- TISSUE SPECIFICITY: Pancreas.
CC -!- SIMILARITY: Belongs to the pancreatic ribonuclease family.
DR PIR; A00826; NRGPB.
DR HSP; P00656; 1SRN.
DR InterPro; IPR001427; RNaseA.
DR Pfam; PF00074; RNaseA; 1.
DR PRINTS; PR00794; RIBONUCLEASE.
DR ProDom; PD000535; RNaseA; 1.
DR SMART; SM00092; RNaseA; 1.
DR PROSITE; PS00127; RNASE_PANCREATIC; 1.
DR KW Hydrolyase; Nuclease; Endonuclease; Glycoprotein.
FT DISULFID 26 84
FT DISULFID 40 95
FT DISULFID 58 110
FT DISULFID 65 72
FT DISULFID 12 12
FT ACT_SITE 41 41
FT ACT_SITE 119 119
FT ACT_SITE 41 41
FT ACT_SITE 119 119
SQ SEQUENCE 119 AA; 119 119
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Dd		8	FQOHIDSSGSPSTNPYCNAMKSRNMTQERCKPVNTFWHEPLADVAVC-----FQKNV	63
Qy		58	-----LTTSEFFSLDCNVTNR-----PCKYKLKKSINTFCVTCENQ--APVHF	98
Dd		64	PCKNGQNCVESTSNWHITDRLTSNKPPDDCLYRTSQBEKSIIVACGNPYVPVHF	120
 RESULT 15 ANGI_MOUSE				
ID	_ANGI_MOUSE	STANDARD;	PFT;	145 AA.
DT	P21570;			
DT	01-MAY-1991	(Rel. 18, Created)		
DT	01-MAY-1991	(Rel. 18, Last sequence update)		
DT	15-MAR-2004	(Rel. 43, Last annotation update)		
DE	Angiogenin precursor	(EC 3.1.27.-) (Ribonuclease 5)		(RNase 5).
DN	ANG.			
OS	Mus musculus (Mouse)			
OC	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;			
OC	Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.			
OK	NCHI_TaxID=10090;			
RN	[1]			
RP	SEQUENCE FROM N.A.			
RX	MEDLINE=91025023; PubMed=2222458;			
RA	Bond M.D., Vallee B.L.;			
RT	"Isolation and sequencing of mouse angiogenin DNA.";			
RL	Biochem. Biophys. Res. Commun. 171:988-995(1990).			
RN	[2]			
RP	SEQUENCE FROM N.A.			
RC	STRAIN=FVB/N; TISSUE=Liver;			
RX	MEDLINE=22388257; PubMed=12477932;			
RA	Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,			
RA	Klausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,			
RA	Atschul S.F., Zebberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,			
RA	Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,			
RA	Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,			
RA	Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,			
RA	Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,			
RA	Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mallahy S.J.,			
RA	Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,			
RA	Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,			
RA	Vallalon D.K., Munz D.M., Sodergren E.J., Lu X., Gibbs R.A.,			
RA	Fahy J., Helton E., Kettman M., Madan A., Rodrigues S., Sanchez A.,			
RA	Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,			
RA	Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,			
RA	Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M.,			
RA	Butterfield Y.S.N., Krzywinski M.I., Skalska U., Smailus D.E.,			
RA	Schwerch A., Schein J.E., Jones S.J.M., Marra M.A.;			
RT	"Generation and initial analysis of more than 15,000 full-length			
RT	human and mouse cDNA sequences."			
RL	Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).			
RN	[3]			
RP	PARTIAL SEQUENCE.			
RC	TISSUE=Sermu;			
RX	MEDLINE=93192291; PubMed=8448182;			
RA	Bond M.D., Strydom D.J., Vallee B.L.;			
RT	"Characterization and sequencing of rabbit, pig and mouse			
RT	angiogenins: discernment of functionally important residues and			
RT	regions";			
RL	Biochim. Biophys. Acta 1162:177-186(1993)			
CC	-1- FUNCTION: May function as a tRNA-specific ribonuclease that binds			
CC	to actin on the surface of endothelial cells; once bound,			
CC	angiogenin is endocytosed and translocated to the nucleus, thereby			
CC	promoting the endothelial invasiveness necessary for blood vessel			
CC	formation. Angiogenin induces vascularization of normal and			
CC	malignant tissues. Abolishes protein synthesis by specifically			
CC	hydrolyzing cellular tRNAs.			
CC	-1- SUBCELLULAR LOCATION: Secreted.			
CC	-1- SIMILARITY: Belongs to the pancreatic ribonuclease family.			
CC	-----			
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CC -----
DR EMBL; U22516; AAA91366.1; -.
DR EMBL; BC055355; AAH55355.1; -.
DR PIR; A35932; A35932.
DR HSP; P03950; IAA4Y.
DR MGD; MGI:88022; Ang.
DR InterPro; IPR001427; RNaseA.
DR Pfam; PF00074; rnaseA; 1.
DR PRINTS; PR00794; RIBONUCLEASE.
DR ProDom; PD000535; RNaseA; 1.
DR SMART; SM00092; RNase_Fc; 1.
DR PROSITE; PS00127; RNASE_PANCREATIC; 1.
KW Hydrolase; Nuclease; Endonuclease; Angiogenesis;
KW Protein synthesis inhibitor; Signal; Pyrrolidone carboxylic acid.
FT SIGNAL 1 24
FT CHAIN 25 145
FT MOD_RES 25 25
FT FT
FT ACT_SITE 37 37
FT ACT_SITE 64 64
FT ACT_SITE 137 137
FT DISULFID 50 104
FT DISULFID 63 115
FT DISULFID 81 130
FT SEQUENCE 145 AA; 16228 MW; 06944260BB764938 CRC64;
SQ
Query Match
Best Local Similarity 20.7%; Score 119.5; DB 1; Length 145;
Matches 33; Conservative 12; Mismatches 45; Indels 17; Gaps 5;
QY 9 KHLNTRDVD-----CNNIMSTNLF--HCKDKNTFIYSRPEPVKAIC--KGLIAKSN 56
Db 32 KFLTQHHDAPKGRDDRYCERMMKRSLTSPCKDVNTFTHGNKSNKAICGANGSPYREN 91
QY 57 V-LTISEFYLDNCVNTS----RPCKYKLKKSNTFCVTCENQAPVHF 98
Db 92 LRMSKSPFQVTTCKHTGSGPRPPCQYRASAGFRHVVIACENGLPVHF 138
Search completed: May 7, 2004, 21:53:05
Job time : 6.25351 secs
```


GenCore version 5.1.6
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OM protein - protein search, using sw model

Run on: May 7, 2004, 21:25:55 ; Search time 44.7895 Seconds
(without alignments)
662.376 Million cell updates/sec

Title: US-09-961-400-13

Perfect score: 582

Sequence: 1 MSDMLTQKKHLNTRDVC.....TFCVTCENQAPVHFVGVC HC 105

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 1596107 seqs, 282547505 residues

Total number of hits satisfying chosen parameters: 1596107

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database :

A_Geneseq_29Jan04:*

- 1: Genesep1980s:*
- 2: Genesep1990s:*
- 3: Genesep2000s:*
- 4: Genesep2001s:*
- 5: Genesep2002s:*
- 6: Genesep2003as:*
- 7: Genesep2003bs:*
- 8: Genesep2004s:*

Prod. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB	ID	Description
1	582	100.0	105	2	AA228871	AA228871 Recombina
2	578	99.3	105	2	AA228867	AA228867 Recombina
3	577	99.1	104	2	AA228870	AA228870 Recombina
4	575	98.8	105	2	AA228869	AA228869 Recombina
5	573	98.5	104	2	AA228865	AA228865 Rana pipi
6	573	98.5	127	2	AA228879	AA228879 Rana pipi
7	570	97.9	104	2	AA228866	AA228866 Recombina
8	560	96.2	112	2	AAW35118	AAW35118 R. pipien
9	560	96.2	251	2	AAW35134	AAW35134 R. pipien
10	560	96.2	254	2	AAW35135	AAW35135 R. pipien
11	560	96.2	355	2	AAW35133	AAW35133 R. pipien
12	560	96.2	355	2	AAW35129	AAW35129 R. pipien
13	560	96.2	366	2	AAW35132	AAW35132 R. pipien
14	556	95.5	104	2	AAW06544	AAW06544 Antitumou
15	556	95.5	105	2	AAW35123	AAW35123 R. pipien
16	556	95.5	355	2	AAW35125	AAW35125 R. pipien
17	556	95.5	358	2	AAW35130	AAW35130 R. pipien
18	555	95.4	105	2	AAW35116	AAW35116 R. pipien
19	553	95.0	105	2	AAW39400	AAW39400 Recombina
20	551	94.7	104	2	AAW12344	AAW12344 Protein w
21	551	94.7	104	2	AAW47303	AAW47303 ONCONASE
22	551	94.7	104	2	AAW00736	AAW00736 Protein d
23	551	94.7	104	2	AAW14065	AAW14065 Onconase
24	551	94.7	104	2	AAW06543	AAW06543 Antitumou
25	551	94.7	104	2	AAW30301	AAW30301 Recombina

26	551	94.7	104	2	AAW88233	AAW88233 Rana pipi
27	551	94.7	104	2	AAW33322	AAW33322 Frog onco
28	551	94.7	104	4	AAW31666	AAW31666 Amino aci
29	551	94.7	104	5	AAW32650	AAW32650 Northern
30	551	94.7	106	2	AAW35122	AAW35122 R. pipien
31	551	94.7	107	2	AAW35117	AAW35117 R. pipien
32	551	94.7	358	2	AAW35127	AAW35127 R. pipien
33	551	94.7	365	2	AAW35131	AAW35131 R. pipien
34	551	94.7	379	2	AAW35126	AAW35126 R. pipien
35	549	94.3	105	2	AAW35115	AAW35115 R. pipien
36	548	94.2	104	2	AAW30302	AAW30302 Recombina
37	546	93.8	104	2	AAW18224	AAW18224 Antitumou
38	543	93.3	104	4	AAW31667	AAW31667 Amino aci
39	543	93.3	104	5	AAW31617	AAW31617 Northern
40	532	91.4	107	2	AAW35120	AAW35120 R. pipien
41	499	85.7	360	2	AAW35128	AAW35128 R. pipien
42	484.5	83.2	111	2	AAW35121	AAW35121 R. pipien
43	445	76.5	83	2	AAW35119	AAW35119 R. pipien
44	445	76.5	83	2	AAW88234	AAW88234 Rana pipi
45	287	49.3	111	2	AAW33321	AAW33321 Frog lect

ALIGNMENTS

RESULT 1	
AA228871	
ID	AA228871 standard; protein; 105 AA.
XX	
AC	AA228871;
XX	
DT	25-JAN-2000 (first entry)
XX	
DE	Recombinant Met(-1) RaPLR1 Gln1Ser amino acid sequence.
XX	
KW	Recombinant Met(-1) Rana pipiens ribonuclease Gln1Ser; RaPLR1; CD22;
KW	covalently bound; IL2 antibody; ligand binding moiety; cancerous B cell;
KW	Kaposi's sarcoma; human chorionic gonadotrophin; hCG; signal peptide;
KW	recombinant ribonuclease; cytotoxic fusion protein; cancer; frog;
KW	autoimmune disease; RNase.
XX	
OS	Rana pipiens.
OS	Synthetic.
XX	
PH	Key Location/Qualifiers
FT	Misc-difference 1 /note= "Met not found in wild type RaPLR1"
FT	Misc-difference 2 /note= "Wild type Gln replaced with Ser"
XX	
PN	WO9950398-A2.
XX	
PD	07-OCT-1999.
XX	
PF	26-MAR-1999; 99WO-US006641.
XX	
PR	27-MAR-1998; 98US-0079751p.
XX	
PA	(USSH) US DEPT HEALTH & HUMAN SERVICES.
XX	
PI	Rybak SM, Newton DL;
XX	
FI	WPI; 1999-610847/52.
DR	N-PSDB; AAZ08129.
XX	
PT	New Recombinant ribonucleases, used for killing target cells, e.g. for
PT	treating cancers, viral infections or autoimmune diseases.
XX	
PS	Claim 34; Page 61; 71pp; English.
XX	
CC	The present sequence is a recombinant Rana pipiens ribonuclease (RaPLR1)
CC	protein with Met at position 1 and Gln2Ser. Carboxy terminal end of
CC	recombinant RaPLR1 has a covalently bound ligand binding moiety, which

CC can be a LL2 antibody directed against CD22 on cancerous B cells or human
 CC chorionic gonadotrophin (hCG) effective against Kaposi's sarcoma cells.
 CC Recombinant ribonucleases can be expressed in bacteria without an N-
 CC terminal methionine due to the presence of a signal peptide that is
 CC cleaved by bacteria. The soluble expression of ribonuclease allows the
 CC proteins to be fused in-frame with ligand binding moieties to form
 CC cytotoxic fusion proteins. They can be used for treatment of cancer and
 CC autoimmune diseases

XX Sequence 105 AA;
 SQ Query Match 100.0%; Score 582; DB 2; Length 105;
 Best Local Similarity 100.0%; Pred. No. 2.6e-62;
 Matches 105; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 MSDMLTFQKKHLTNTDVCNNIMSTNLFHCKDKNTFIYSRPPVKAICKGIIASKNVLT 60
 Db 1 MSDMLTFQKKHLTNTDVCNNIMSTNLFHCKDKNTFIYSRPPVKAICKGIIASKNVLT 60
 QY 61 TSEFYLSDCNVTSRCPCKYKLLKSTNTFCVTCENQAPVHFVGHC 105
 Db 61 TSEFYLSDCNVTSRCPCKYKLLKSTNTFCVTCENQAPVHFVGHC 105

RESULT 2
 AAY28867
 ID AAY28867 standard; protein; 105 AA.
 XX AC AAY28867;
 XX DT 25-JAN-2000 (first entry)
 XX DE Recombinant Met(-1) RaPLR1.
 XX KW Recombinant Met(-1) Rana pipiens ribonuclease; RaPLR1; CD22; RNase;
 KW covalently bound; LL2 antibody; ligand binding moiety; cancerous B cell;
 KW Kaposi's sarcoma; human chorionic gonadotrophin; hCG; signal peptide;
 KW recombinant ribonuclease; cytotoxic fusion protein; cancer; frog;
 KW autoimmune disease.
 XX OS Rana pipiens.
 OS Synthetic.
 XX FH Key Location/Qualifiers
 FT Misc-difference 1 /note= "Met not found in wild type RaPLR1"
 XX WO9950398-A2.
 XX PD 07-OCT-1999.
 XX PF 26-MAR-1999; 99WO-US006641.
 XX PR 27-MAR-1998; 98US-0079751P.
 XX PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
 XX PI Rybak SM, Newton DL;
 XX WPI: 1999-610847/52.
 XX DR N-PSDB; AAZ08126.
 XX PT New recombinant ribonucleases, used for killing target cells, e.g. for
 PT treating cancers, viral infections or autoimmune diseases.
 XX PS Claim 34; Page 57; 71pp; English.

CC The present sequence is a recombinant Rana pipiens ribonuclease (RaPLR1)
 CC protein with Met at position 1. Carboxy terminal end of recombinant
 CC RaPLR1 has a covalently bound ligand binding moiety, which can be a LL2
 CC antibody directed against CD22 on cancerous B cells or human chorionic
 CC gonadotrophin (hCG) effective against Kaposi's sarcoma cells. Recombinant
 CC ribonucleases can be expressed in bacteria without an N-terminal

CC methionine due to the presence of a signal peptide that is cleaved by
 CC bacteria. The soluble expression of ribonuclease allows the proteins to
 CC be fused in-frame with ligand binding moieties to form cytotoxic fusion
 CC proteins. They can be used for treatment of cancer and autoimmune
 CC diseases

XX Sequence 105 AA;
 SQ Query Match 99.3%; Score 578; DB 2; Length 105;
 Best Local Similarity 99.0%; Pred. No. 8e-62;
 Matches 104; Conservative 0; Mismatches 1; Indels 0; Gaps 0;
 QY 1 MSDMLTFQKKHLTNTDVCNNIMSTNLFHCKDKNTFIYSRPPVKAICKGIIASKNVLT 60
 Db 1 MQDMLTFQKKHLTNTDVCNNIMSTNLFHCKDKNTFIYSRPPVKAICKGIIASKNVLT 60
 QY 61 TSEFYLSDCNVTSRCPCKYKLLKSTNTFCVTCENQAPVHFVGHC 105
 Db 61 TSEFYLSDCNVTSRCPCKYKLLKSTNTFCVTCENQAPVHFVGHC 105

RESULT 3
 AAY28870
 ID AAY28870 standard; protein; 104 AA.
 XX AC AAY28870;
 XX DT 25-JAN-2000 (first entry)
 XX DE Recombinant RaPLR1 Gln1Ser amino acid sequence.
 XX KW Recombinant Rana pipiens ribonuclease; RaPLR1 Gln1Ser; covalently bound;
 KW LL2 antibody; ligand binding moiety; CD22; cancerous B cell; frog;
 KW Kaposi's sarcoma; human chorionic gonadotrophin; hCG; signal peptide;
 KW recombinant ribonuclease; cytotoxic fusion protein; cancer; RNase;
 KW autoimmune disease.
 XX OS Rana pipiens.
 OS Synthetic.
 XX FH Key Location/Qualifiers
 FT Misc-difference 1 /note= "Wild type Gln replaced with Ser"
 XX WO9950398-A2.
 XX PD 07-OCT-1999.
 XX PF 26-MAR-1999; 99WO-US006641.
 XX PR 27-MAR-1998; 98US-0079751P.
 XX PA (USSH) US DEPT HEALTH & HUMAN SERVICES.
 XX PI Rybak SM, Newton DL;
 XX WPI: 1999-610847/52.
 XX DR N-PSDB; AAZ08128.
 XX PT New recombinant ribonucleases, used for killing target cells, e.g. for
 PT treating cancers, viral infections or autoimmune diseases.
 XX PS Claim 34; Page 60; 71pp; English.

CC The present sequence is a recombinant Rana pipiens ribonuclease (RaPLR1)
 CC protein with Gln1Ser. Carboxy terminal end of recombinant RaPLR1 has a
 CC covalently bound ligand binding moiety, which can be a LL2 antibody
 CC directed against CD22 on cancerous B cells or human chorionic
 CC gonadotrophin (hCG) effective against Kaposi's sarcoma cells. Recombinant
 CC ribonucleases can be expressed in bacteria without an N-terminal
 CC methionine due to the presence of a signal peptide that is cleaved by
 CC bacteria. The soluble expression of ribonuclease allows the proteins to
 CC be fused in-frame with ligand binding moieties to form cytotoxic fusion

CC proteins. They can be used for treatment of cancer and autoimmune
CC diseases

XX Sequence 104 AA;

SQ Query Match 99.1%; Score 577; DB 2; Length 104;
Best Local Similarity 100.0%; Pred. No. 1e-61;
Matches 104; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 2 SDWLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFYSRPEPVKAICKGLIASKNVLT 61
Db 1 SDWLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFYSRPEPVKAICKGLIASKNVLT 60
Qy 62 SEFYLSDCNVTSRPCKYKLLKSTNTFCVTENQAPVHFVGVGHC 105
Db 61 SEFYLSDCNVTSRPCKYKLLKSTNTFCVTENQAPVHFVGVGHC 104

RESULT 4

AA28869
ID AAY28869 standard; protein; 105 AA.

XX AC AAY28869;

XX DT 25-JAN-2000 (first entry)

XX DE Recombinant Met(-1) RapLr1 Met23Leu-(His)6 protein.

XX KW Recombinant Met(-1) Rana pipiens ribonuclease Met23Leu-(His)6; RapLr1;
KW CD22; covalently bound; LL2 antibody; ligand binding moiety; RNase;
KW cancerous B cell; Kaposi's sarcoma; human chorionic gonadotrophin; hCG;
KW signal peptide; recombinant ribonuclease; cytotoxic fusion protein;
KW cancer; frog; autoimmune disease.

XX OS Rana pipiens.

XX OS Synthetic.

XX FH Key Location/Qualifiers

FT Misc-difference 1 /note= "Met not found in wild type RapLr1"

FT Misc-difference 1 /note= "(His)6 histidine tag attached to N-terminal Met"

FT Misc-difference 24

FT /note= "Wild type Met replaced with Leu"

XX PN WO9950398-A2.

XX XX 07-OCT-1999.

XX PF 26-MAR-1999; 99WO-US006641.

XX PR 27-MAR-1998; 98US-0079751P.

XX PA (USSH) US DEPT HEALTH & HUMAN SERVICES.

XX PI Rybak SM, Newton DL;

XX DR WPI; 1999-610847/52.

XX DR N-PSDB; AA208127.

XX PT New recombinant ribonucleases, used for killing target cells, e.g. for
XX treating cancers, viral infections or autoimmune diseases.

XX PS Claim 4; Page 59; 71pp; English.

XX CC The present sequence is a recombinant Rana pipiens ribonuclease protein
CC (RapLr1) with Met at position 1 attached to (His)6 tag and Met24Leu.
CC Carboxy terminal end of recombinant RapLr1 has a covalently bound ligand
CC binding moiety, which can be a LL2 antibody directed against CD22 on
CC cancerous B cells or human chorionic gonadotrophin (hCG) effective
CC against Kaposi's sarcoma cells. Recombinant ribonucleases can be
CC expressed in bacteria without an N-terminal methionine due to the
CC presence of a signal peptide that is cleaved by bacteria. The soluble

CC expression of ribonuclease allows the proteins to be fused in-frame with
CC ligand binding moieties to form cytotoxic fusion proteins. They can be
CC used for treatment of cancer and autoimmune diseases

SQ Sequence 105 AA;

Query Match 99.8%; Score 575; DB 2; Length 105;
Best Local Similarity 98.1%; Pred. No. 1.8e-61;
Matches 103; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

Qy 1 MSDWLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFYSRPEPVKAICKGLIASKNVLT 60
Db 1 MQDWLTFQKKHLNTRDVCNNILSTNLFHCKDKNTFYSRPEPVKAICKGLIASKNVLT 60
Qy 61 TSEFYLSDCNVTSRPCKYKLLKSTNTFCVTENQAPVHFVGVGHC 105
Db 61 TSEFYLSDCNVTSRPCKYKLLKSTNTFCVTENQAPVHFVGVGHC 105

RESULT 5

AA28865
ID AAY28865 standard; protein; 104 AA.

XX AC AAY28865;

XX DT 25-JAN-2000 (first entry)

XX DE Rana pipiens liver ribonuclease (RapLr1).

XX KW Rana pipiens liver ribonuclease; RapLr1; covalently bound; LL2 antibody;
KW ligand binding moiety; CD22; cancerous B cell; Kaposi's sarcoma; frog;
KW human chorionic gonadotrophin; hCG; recombinant ribonuclease; RNase;
KW signal peptide; cytotoxic fusion protein; cancer; autoimmune disease.

XX OS Rana pipiens.

XX PN WO9950398-A2.

XX PD 07-OCT-1999.

XX PF 26-MAR-1999; 99WO-US006641.

XX PR 27-MAR-1998; 98US-0079751P.

XX PA (USSH) US DEPT HEALTH & HUMAN SERVICES.

XX PI Rybak SM, Newton DL;

XX DR WPI; 1999-610847/52.

XX DR N-PSDB; AA208124.

XX PT New recombinant ribonucleases, used for killing target cells, e.g. for
XX treating cancers, viral infections or autoimmune diseases.

XX PS Claim 1; Page 55; 71pp; English.

XX CC The present sequence is Rana pipiens liver ribonuclease (RapLr1) protein.
XX Carboxy terminal end of RapLr1 has a covalently bound ligand binding
XX moiety, which can be a LL2 antibody directed against CD22 on cancerous B
XX cells or human chorionic gonadotrophin (hCG) effective against Kaposi's
XX Sarcoma cells. Recombinant ribonucleases can be expressed in bacteria
XX without an N-terminal methionine due to the presence of a signal peptide
XX that is cleaved by bacteria. The soluble expression of ribonuclease
XX allows the proteins to be fused in-frame with ligand binding moieties to
XX form cytotoxic fusion proteins. They can be used for treatment of cancer
XX and autoimmune diseases

SQ Sequence 104 AA;

Query Match 98.5%; Score 573; DB 2; Length 104;
Best Local Similarity 100.0%; Pred. No. 3.2e-61;
Matches 103; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 3 DMLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFYSRPEPVKAICKGIIASKNVLTTTS 62
 |||||
 Db 2 DMLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFYSRPEPVKAICKGIIASKNVLTTTS 61
 |||||
 QY 63 EFYLSDCNVTSPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 105
 |||||
 Db 62 EFYLSDCNVTSPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 104
 |||||

RESULT 6

AAV28879
 ID AAY28879 standard; protein; 127 AA.
 XX
 AC AAY28879;
 XX
 DT 25-JAN-2000 (first entry)
 XX
 DE Rana pipiens Clone 5alb ribonuclease.

XX Rana pipiens ribonuclease Clone 5alb; RaPLR1; covalently bound; RNase;
 KW LL2 antibody; ligand binding moiety; CD22; cancerous B cell; onconase;
 KW Kaposi's Sarcoma; human chorionic gonadotropin; hCG; cancer;
 KW recombinant ribonuclease; frog; signal peptide; cytotoxic fusion protein;
 KW autoimmune disease.
 XX

OS Rana pipiens.

XX Key Location/Qualifiers
 FH Peptide 1..23
 FT /label= Signal peptide
 FT /note= "Putative"
 FT Protein 24..127
 FT /label= Rana_pipiens_Clone_5alb_ribonuclease
 XX
 PN WO950398-A2.
 XX
 XX 07-OCT-1999.
 PD
 PF 26-MAR-1999; 99WO-US006641.
 XX
 PR 27-MAR-1998; 98US-0079751P.
 XX
 PA (USSH) US DEPT HEALTH & HUMAN SERVICES.

XX Rybak SM, Newton DL;
 PI WPI; 1999-610847/52.
 XX DR N-PSDB; AAZ08136.
 XX
 PT New recombinant ribonucleases, used for killing target cells, e.g. for
 PT treating cancers, viral infections or autoimmune diseases.
 XX
 PS Disclosure; Page 69; 71pp; English.

XX The present sequence is a Rana pipiens Clone 5alb ribonuclease (RaPLR1).
 CC It is encoded by clone 5alb cDNA obtained from Rana pipiens liver mRNA
 CC library. It exhibits differences with Onconase (RTM) at amino acid
 CC residues 11, 20, 85 and 103. Carboxy terminal end of RaPLR1 has a
 CC covalently bound ligand binding moiety, which can be a LL2 antibody
 CC directed against CD22 on cancerous B cells or human chorionic
 CC gonadotropin (hCG) effective against Kaposi's Sarcoma cells. Recombinant
 CC ribonucleases can be expressed in bacteria without an N-terminal
 CC methionine due to the presence of a signal peptide that is cleaved by
 CC bacteria. The soluble expression of ribonuclease allows the proteins to
 CC be fused in-frame with ligand binding moieties to form cytotoxic fusion
 CC proteins. They can be used for treatment of cancer and autoimmune
 CC diseases
 XX

SQ Sequence 127 AA;

Query Match 98.5%; Score 573; DB 2; Length 127;
 Best Local Similarity 100.0%; Pred. No. 4.1e-61;
 Matches 103; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 3 DMLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFYSRPEPVKAICKGIIASKNVLTTTS 62
 |||||
 Db 25 DMLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFYSRPEPVKAICKGIIASKNVLTTTS 84
 |||||
 QY 63 EFYLSDCNVTSPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 105
 |||||
 Db 85 EFYLSDCNVTSPCKYKLLKSTNTFCVTCENQAPVHFVGVGHC 127
 |||||

RESULT 7

AAV28866
 ID AAY28866 standard; protein; 104 AA.
 XX
 AC AAY28866;
 XX
 DT 25-JAN-2000 (first entry)
 XX
 DE Recombinant RaPLR1 Met23Leu amino acid sequence.

XX Recombinant Rana pipiens ribonuclease; RaPLR1 Met23Leu; covalently bound;
 KW LL2 antibody; ligand binding moiety; CD22; cancerous B cell; RNase;
 KW Kaposi's sarcoma; human chorionic gonadotropin; hCG; signal peptide;
 KW recombinant ribonuclease; cytotoxic fusion protein; cancer; frog;
 KW autoimmune disease.
 XX

OS Rana pipiens.
 OS Synthetic.

XX Key Location/Qualifiers
 FH Misc-difference 23 /note= "Wild type Met replaced with Leu"
 FT
 FT
 XX

PN WO950398-A2.

XX 07-OCT-1999.

XX 26-MAR-1999; 99WO-US006641.

XX 27-MAR-1998; 98US-0079751P.

XX (USSH) US DEPT HEALTH & HUMAN SERVICES.

XX Rybak SM, Newton DL;

XX WPI; 1999-610847/52.

XX DR N-PSDB; AAZ08125.

XX New recombinant ribonucleases, used for killing target cells, e.g. for
 PT treating cancers, viral infections or autoimmune diseases.

XX Claim 34; Page 56; 71pp; English.

XX The present sequence is a recombinant Rana pipiens ribonuclease (RaPLR1)
 CC protein with Met23Leu. Carboxy terminal end of recombinant RaPLR1 has a
 CC covalently bound ligand binding moiety, which can be a LL2 antibody
 CC directed against CD22 on cancerous B cells or human chorionic
 CC gonadotropin (hCG) effective against Kaposi's sarcoma cells. Recombinant
 CC ribonucleases can be expressed in bacteria without an N-terminal
 CC methionine due to the presence of a signal peptide that is cleaved by
 CC bacteria. The soluble expression of ribonuclease allows the proteins to
 CC be fused in-frame with ligand binding moieties to form cytotoxic fusion
 CC proteins. They can be used for treatment of cancer and autoimmune
 CC diseases
 XX

SQ Sequence 104 AA;

Query Match 97.9%; Score 570; DB 2; Length 104;
 Best Local Similarity 99.0%; Pred. No. 7.3e-61;
 Matches 102; Conservative 1; Mismatches 0; Indels 0; Gaps 0;
 QY 3 DMLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFYSRPEPVKAICKGIIASKNVLTTTS 62
 |||||

```
Db      2 DMLTFQKKHLNTRDVCNNILSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLTFS 61
Qy      63 EFYLSDCNVTSPCKYKLGKSTNTFCVTCENQAPVHFVGVGHC 105
Db      62 EFYLSDCNVTSPCKYKLGKSTNTFCVTCENQAPVHFVGVGHC 104

RESULT 8
AAW35118
ID AAW35118 standard; protein; 112 AA.
XX
AC AAW35118;
XX
XX 20-APR-1998 (first entry)
XX
DE R. pipiens recombinant RNase protein NLSMetSerrOnc.
XX
KW RNase A; ribonuclease; cytotoxic; onconase; nOnc; immunofusion;
KW tumour cell growth; frog.
XX
OS Rana pipiens.
XX
PN WO9731116-A2.
XX
PD 28-AUG-1997.
XX
PF 19-FEB-1997; 97WO-US002588.
XX
PR 21-FEB-1996; 96US-0011800P.
XX
PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Rybak SM, Newton DL, Boque L, Wlodawer A;
XX
DR WPI; 1997-435168/40.
DR N-PSDB; AAT94955.
XX
PT Ribonuclease molecules based on native Onconase - used for killing cells,
PT particularly tumour cells.
XX
PS Claim 18; Page 63; 90pp; English.
XX
CC AAW35115 to AAW35123 encode recombinant proteins (rOnc) which are
CC modifications of the RNase Onconase (RTM) (nOnc). Such novel ribonuclease
CC molecules are highly cytotoxic and can be used alone or to form chemical
CC conjugates or to target recombinant immunofusions. They are used
CC particularly for decreasing tumour cell growth. They can also be used for
CC cell separation in vitro by selectively killing unwanted types of cells,
CC e.g. in bone marrow prior to transplantation into a patient undergoing
CC marrow ablation by radiation, or for killing leukaemia cells or T-cells
CC that would cause graft versus host disease. The toxins can also be used
CC to selectively kill unwanted cells in culture. The new ribonucleases have
CC increased cytotoxic activity compared to nOnc and also lower
CC immunogenicity in humans
XX
SQ Sequence 112 AA;
Query Match 96.2%; Score 560; DB 2; Length 112;
Best Local Similarity 96.2%; Pred. No. 1.3e-59;
Matches 101; Conservative 2; Mismatches 2; Indels 0; Gaps 0;

Qy      1 MSDMLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 60
Db      8 MSDMLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 67
Qy      61 TSEFYLSDCNVTSPCKYKLGKSTNTFCVTCENQAPVHFVGVGHC 105
Db      68 TSEFYLSDCNVTSPCKYKLGKSTNTFCVTCENQAPVHFVGVGSC 112

RESULT 9
AAW35134
ID AAW35134 standard; protein; 251 AA.
XX
AC AAW35134;
XX
XX 20-APR-1998 (first entry)
XX
DE R. pipiens recombinant RNase rOnc fusion protein 11.
XX
KW RNase A; ribonuclease; cytotoxic; onconase; nOnc; immunofusion;
KW tumour cell growth; frog.
```

```
XX
AC AAW35134;
XX
XX 20-APR-1998 (first entry)
XX
DE R. pipiens recombinant RNase rOnc fusion protein 10.
XX
KW RNase A; ribonuclease; cytotoxic; onconase; nOnc; immunofusion;
KW tumour cell growth; frog.
XX
OS Rana pipiens.
XX
PN WO9731116-A2.
XX
PD 28-AUG-1997.
XX
PF 19-FEB-1997; 97WO-US002588.
XX
PR 21-FEB-1996; 96US-0011800P.
XX
PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Rybak SM, Newton DL, Boque L, Wlodawer A;
XX
DR WPI; 1997-435168/40.
DR N-PSDB; AAT94972.
XX
PT Ribonuclease molecules based on native Onconase - used for killing cells,
PT particularly tumour cells.
XX
PS Disclosure; Page 76; 90pp; English.
XX
CC Sequences AAW35125 to AAW35135 represent recombinant fusion proteins
CC (rOnc) which are modifications of the RNase Onconase (RTM) (nOnc). Such
CC novel ribonuclease molecules are highly cytotoxic and can be used alone
CC or to form chemical conjugates or to target recombinant immunofusions.
CC They are used particularly for decreasing tumour cell growth. They can
CC also be used for cell separation in vitro by selectively killing unwanted
CC types of cells, e.g. in bone marrow prior to transplantation into a
CC patient undergoing marrow ablation by radiation, or for killing leukaemia
CC cells or T-cells that would cause graft versus host disease. The toxins
CC can also be used to selectively kill unwanted cells in culture. The new
CC ribonucleases have increased cytotoxic activity compared to nOnc and also
CC lower immunogenicity in humans
XX
SQ Sequence 251 AA;
Query Match 96.2%; Score 560; DB 2; Length 251;
Best Local Similarity 96.2%; Pred. No. 3.7e-59;
Matches 101; Conservative 2; Mismatches 2; Indels 0; Gaps 0;

Qy      1 MSDMLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 60
Db      147 MSDMLTFQKKHLNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 206
Qy      61 TSEFYLSDCNVTSPCKYKLGKSTNTFCVTCENQAPVHFVGVGHC 105
Db      207 TSEFYLSDCNVTSPCKYKLGKSTNTFCVTCENQAPVHFVGVGSC 251

RESULT 10
AAW35135
ID AAW35135 standard; protein; 254 AA.
XX
AC AAW35135;
XX
XX 20-APR-1998 (first entry)
XX
DE R. pipiens recombinant RNase rOnc fusion protein 11.
XX
KW RNase A; ribonuclease; cytotoxic; onconase; nOnc; immunofusion;
KW tumour cell growth; frog.
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XX OS Rana pipiens.
XX OS Synthetic.
XX PN WO9731116-A2.
XX PD 28-AUG-1997.
XX PF 19-FEB-1997; 97WO-US002588.
XX PR 21-FEB-1996; 96US-0011800P.
XX PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX PI Rybak SM, Newton DL, Boque L, Wlodawer A;
XX DR WPI; 1997-435168/40.
XX DR N-PSDB; AAT94973.
XX PT Ribonuclease molecules based on native Onconase - used for killing cells,
XX PT particularly tumour cells.
XX PS Disclosure; Page 77; 90pp; English.
XX CC Sequences AAW35125 to AAW35135 represent recombinant fusion proteins
XX CC (rOnc) which are modifications of the RNase Onconase (RTM) (nOnc). Such
XX CC novel ribonuclease molecules are highly cytotoxic and can be used alone
XX CC or to form chemical conjugates or to target recombinant immunofusions.
XX CC They are used particularly for decreasing tumour cell growth. They can
XX CC also be used for cell separation in vitro by selectively killing unwanted
XX CC types of cells, e.g. in bone marrow prior to transplantation into a
XX CC patient undergoing marrow ablation by radiation, or for killing leukaemia
XX CC cells or T-cells that would cause graft versus host disease. The toxins
XX CC can also be used to selectively kill unwanted cells in culture. The new
XX CC ribonucleases have increased cytotoxic activity compared to nOnc and also
XX CC lower immunogenicity in humans
XX SQ Sequence 254 AA;
XX Query Match 96.2%; Score 560; DB 2; Length 254;
XX Best Local Similarity 96.2%; Pred. No. 3.7e-59;
XX Matches 101; Conservative 2; Mismatches 2; Indels 0; Gaps 0;
QY 1 MSDWLTFOKKHILNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 60
Db 1 MSDWLTFOKKHILNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 60
QY 61 TSEFYLSDCNVTSRPCCKYKLGKSTNFCVTCENQAPVHFVGVC 105
Db 61 TSEFYLSDCNVTSRPCCKYKLGKSTNFCVTCENQAPVHFVGVC 105
RESULT 11
AAW35133
ID AAW35133 standard; protein; 355 AA.
XX AC AAW35133;
XX DT 20-APR-1998 (first entry)
XX DE R. pipiens recombinant RNase rOnc fusion protein 9.
XX RNase A; ribonuclease; cytotoxic; onconase; nOnc; immunofusion;
XX tumour cell growth; frog.
XX OS Rana pipiens.
XX OS Synthetic.
XX PN WO9731116-A2.
XX PD 28-AUG-1997.
XX PF 19-FEB-1997; 97WO-US002588.

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XX PR 21-FEB-1996; 96US-0011800P.
XX PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX PI Rybak SM, Newton DL, Boque L, Wlodawer A;
XX DR WPI; 1997-435168/40.
XX DR N-PSDB; AAT94971.
XX PT Ribonuclease molecules based on native Onconase - used for killing cells,
XX PT particularly tumour cells.
XX PS Disclosure; Page 75; 90pp; English.
XX CC Sequences AAW35125 to AAW35135 represent recombinant fusion proteins
XX CC (rOnc) which are modifications of the RNase Onconase (RTM) (nOnc). Such
XX CC novel ribonuclease molecules are highly cytotoxic and can be used alone
XX CC or to form chemical conjugates or to target recombinant immunofusions.
XX CC They are used particularly for decreasing tumour cell growth. They can
XX CC also be used for cell separation in vitro by selectively killing unwanted
XX CC types of cells, e.g. in bone marrow prior to transplantation into a
XX CC patient undergoing marrow ablation by radiation, or for killing leukaemia
XX CC cells or T-cells that would cause graft versus host disease. The toxins
XX CC can also be used to selectively kill unwanted cells in culture. The new
XX CC ribonucleases have increased cytotoxic activity compared to nOnc and also
XX CC lower immunogenicity in humans
XX SQ Sequence 355 AA;
XX Query Match 96.2%; Score 560; DB 2; Length 355;
XX Best Local Similarity 96.2%; Pred. No. 5.8e-59;
XX Matches 101; Conservative 2; Mismatches 2; Indels 0; Gaps 0;
QY 1 MSDWLTFOKKHILNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 60
Db 1 MSDWLTFOKKHILNTRDVCNNIMSTNLFHCKDKNTFIYSRPEPVKAICKGIIASKNVLT 60
QY 61 TSEFYLSDCNVTSRPCCKYKLGKSTNFCVTCENQAPVHFVGVC 105
Db 61 TSEFYLSDCNVTSRPCCKYKLGKSTNFCVTCENQAPVHFVGVC 105
RESULT 12
AAW35129
ID AAW35129 standard; protein; 355 AA.
XX AC AAW35129;
XX DT 20-APR-1998 (first entry)
XX DE R. pipiens recombinant RNase rOnc fusion protein 5.
XX RNase A; ribonuclease; cytotoxic; onconase; nOnc; immunofusion;
XX tumour cell growth; frog.
XX OS Rana pipiens.
XX OS Synthetic.
XX PN WO9731116-A2.
XX PD 28-AUG-1997.
XX PF 19-FEB-1997; 97WO-US002588.
XX PR 21-FEB-1996; 96US-0011800P.
XX PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX PI Rybak SM, Newton DL, Boque L, Wlodawer A;
XX DR WPI; 1997-435168/40.
XX DR N-PSDB; AAT94967.

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XX Ribonuclease molecules based on native Onconase - used for killing cells,
PT particularly tumour cells.

XX Disclosure; Page 71; 90pp; English.

XX Sequences AAW35125 to AAW35135 represent recombinant fusion proteins
(rOnc) which are modifications of the RNase Onconase (RTM) (nOnc). Such
novel ribonuclease molecules are highly cytotoxic and can be used alone
or to form chemical conjugates or to target recombinant immunofusions.
XX They are used particularly for decreasing tumour cell growth. They can
also be used for cell separation in vitro by selectively killing unwanted
types of cells, e.g. in bone marrow prior to transplantation into a
patient undergoing marrow ablation by radiation, or for killing leukaemia
cells or T-cells that would cause graft versus host disease. The toxins
can also be used to selectively kill unwanted cells in culture. The new
ribonucleases have increased cytotoxic activity compared to nOnc and also
lower immunogenicity in humans

XX Sequence 355 AA;

Query Match 96.2%; Score 560; DB 2; Length 355;

Best Local Similarity 96.2%; Pred. No. 5.8e-59; Length 355;
Matches 101; Conservative 2; Mismatches 2; Indels 0; Gaps 0;

Qy 1 MSDWLTQKKHITNTRDVCNIMSTNLFHCCKNTFIYSRPEPVKAICKGIIASKNVLT 60
Db 251 MSDWLTQKKHITNTRDVCNIMSTNLFHCCKNTFIYSRPEPVKAICKGIIASKNVLT 310

Qy 61 TSEFYSDCNVTSRCKYKLLKSKNTNFCVTCENQAPVHFVGVGHC 105

Db 311 TSEFYSDCNVTSRCKYKLLKSKNTNFCVTCENQAPVHFVGVGSC 355

RESULT 13

AAW35132
ID AAW35132 standard; protein; 366 AA.

XX AAW35132;

XX 20-APR-1998 (first entry)

XX R. pipiens recombinant RNase rOnc fusion protein 8.

XX RNase A; ribonuclease; cytotoxic; onconase; nOnc; immunofusion;
XX tumour cell growth; frog.

XX Rana pipiens.
XX Synthetic.

XX WO9731116-A2.

XX 28-AUG-1997.

XX 19-FEB-1997; 97WO-US002588.

XX 21-FEB-1996; 96US-0011800P.

XX (USSH) US DEPT HEALTH & HUMAN SERVICES.

XX Rybak SM, Newton DL, Boque L, Wlodawer A;

XX WPI; 1997-435168/40.

XX N-PSDB; AAT94970.

XX Ribonuclease molecules based on native Onconase - used for killing cells,
PT particularly tumour cells.

XX Disclosure; Page 74; 90pp; English.

XX Sequences AAW35125 to AAW35135 represent recombinant fusion proteins
(rOnc) which are modifications of the RNase Onconase (RTM) (nOnc). Such
novel ribonuclease molecules are highly cytotoxic and can be used alone

CC or to form chemical conjugates or to target recombinant immunofusions.
CC They are used particularly for decreasing tumour cell growth. They can
CC also be used for cell separation in vitro by selectively killing unwanted
CC types of cells, e.g. in bone marrow prior to transplantation into a
CC patient undergoing marrow ablation by radiation, or for killing leukaemia
CC cells or T-cells that would cause graft versus host disease. The toxins
CC can also be used to selectively kill unwanted cells in culture. The new
CC ribonucleases have increased cytotoxic activity compared to nOnc and also
CC lower immunogenicity in humans

XX Sequence 366 AA;

Query Match 96.2%; Score 560; DB 2; Length 366;

Best Local Similarity 96.2%; Pred. No. 6e-59; Length 366;
Matches 101; Conservative 2; Mismatches 2; Indels 0; Gaps 0;

Qy 1 MSDWLTQKKHITNTRDVCNIMSTNLFHCCKNTFIYSRPEPVKAICKGIIASKNVLT 60

Db 262 MSDWLTQKKHITNTRDVCNIMSTNLFHCCKNTFIYSRPEPVKAICKGIIASKNVLT 321

Qy 61 TSEFYSDCNVTSRCKYKLLKSKNTNFCVTCENQAPVHFVGVGHC 105

Db 322 TSEFYSDCNVTSRCKYKLLKSKNTNFCVTCENQAPVHFVGVGSC 366

RESULT 14

AAW06544
ID AAW06544 standard; protein; 104 AA.

XX AAW06544;

XX 22-AUG-1997 (first entry)

XX Antitumour protein from Rana pipiens oocytes.

XX Tumour; chemotherapy; radiotherapy; frog.

XX Rana pipiens.

XX WO9639428-A1.

XX 12-DEC-1996.

XX 03-JUN-1996; 96WO-US008304.

XX 06-JUN-1995; 95US-00467955.

XX (ALFA-) ALFACELL CORP.

XX Ardelt WJ;

XX WPI; 1997-043063/04.

XX Antitumour proteins from Rana pipiens oocyte(s) - have fewer
PT disadvantages than chemotherapy, surgery and radiotherapy.

XX Claim 8; Page 28; 45pp; English.

XX The present sequence is a specifically claimed example of an antitumour
protein from the generic protein in AAMI8224, with the molecular weight
CC 12000. This is one of two preferred proteins (the other in AAW06543) that
CC have been isolated from Rana pipiens oocytes. Both proteins have a
CC blocked amino terminal group and are essentially free of carbohydrates.
CC The proteins are used to treat tumours. Use of the peptides has fewer
CC disadvantages than chemotherapy, radiotherapy and surgery in the
CC treatment of tumours

XX Sequence 104 AA;

Query Match 95.5%; Score 556; DB 2; Length 104;

Best Local Similarity 97.1%; Pred. No. 3.6e-59; Length 104;
Matches 100; Conservative 1; Mismatches 2; Indels 0; Gaps 0;

